UNITED REPUBLIC OF TANZANIA

MINISTRY OF ENERGY

ENERGY AND WATER UTILITIES REGULATORY AUTHORITY

(EWURA)

THE ELECTRICITY SUB-SECTOR REGULATORY PERFORMANCE UPDATES – DECEMBER 2024

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ABBREVIATIONS AND ACRONYMS

CAIDI	:	Customer Average Interruption Duration Index
Cap.	:	Chapter
COD	:	Commercial Operation Date
ESI	:	Electricity Supply Industry
EWURA	:	Energy and Water Utilities Regulatory Authority
GO	:	Gas Oil
GW	:	Giga Watt
GWh	:	Gigawatt-hour
HFO	:	Heavy Fuel Oil
HSE	:	Health, Safety and Environment
IDO	:	Industrial Diesel Oil
km	:	Kilometre
kV	:	Kilo Volt
LV	:	Low Voltage
MoE	:	Ministry of Energy
MV	:	Medium Voltage
MVA	:	Mega Volt Ampere
MW	:	Mega Watt
MWh	:	Megawatt-hour
PPA	:	Power Purchase Agreement
REA	:	Rural Energy Agency
SAIDI	:	System Average Interruption Duration Index
SAIDI-CP		System Average Interruption Duration Index
SAIFI	:	System Average Interruption Frequency Index at Connection Point
SAIFI-CP	:	System Average Interruption Frequency Index at Connection Point
SPP	:	Small Power Producer
SPPA	:	Standardized Power Purchase Agreement
SPPT	:	Standardized Small Power Projects Tariff
SGR	:	Standard Gauge Railway
TANESCO	:	Tanzania Electric Supply Company Limited
TANWAT	:	Tanganyika Wattle Company Limited
TBS	:	Tanzania Bureau of Standards
TGP	:	Tegeta Gas Power Plant
TPC	:	Tanganyika Planting Company
UGP1	:	Ubungo Gas Power Plant 1
UGP2	:	Ubungo Gas Power Plant 2
VSPP		Very Small Power Producer
ZECO	:	Zanzibar Electricity Corporation Limited

EXECUTIVE SUMMARY

This report presents the regulatory performance of the Electricity Supply Industry from 1st July 2024 to 31st December 2024. It is made under Section 30(7) of the Electricity Act, Cap. 131, which requires EWURA to publish reports on the performance of licensees including, but not limited to, quality, reliability, and security of supply, the progress of electrification, investment, efficiency of operations, and other standards of customer services.

During the period under review, 13 entities had registered to generate electricity below one (1) megawatt, and four (4) projects that account for 736MW had approval for the Initiation of Procurement of New Electricity Supply Installations to develop power plants in partnership with TANESCO.

Thirty-six (36) electricity generation licenses exist with a combined installed capacity of 3,396.80MW from 28 licenses in June 2024. Also, 9,754 electrical installation licenses exist to enhance electrical installations, particularly in rural areas, from 9026 to June 2024.

Sixty (60) power purchase agreements existed with a combined capacity of 457.125 MW from 59 PPA in June 2024. Also, seven (7) tariff orders exist for entities/utilities selling electricity to customers. Likewise, the feed-in tariff exists for entities selling electricity in bulk to the main grid and off-grid between 100kW and 10MW.

Installed capacity reached 3,360.80MW from 2,411.33MW in June 2024. Electricity demand reached 2,174.24MW (including own-use and off-grid demand) from 1,654.2MW (excluding own-use and off-grid demand). Also, the transmission line route length reached 7,809.67km from 7,524km in June 2024. Furthermore, the distribution line route length reached 199,974.6km from 188,266.23 km in June 2024.

Connected Customers reached 5,225,193 from 4,982,259 in June 2024. Also, forty-five (45) complaints and disputes between regulated entities and respective customers were resolved. Furthermore, the revenue collection efficiency reached 99% and went above the target of 96%.

The System Average Interruption Frequency Index (SAIFI) in the electricity transmission network was 3.89 incidences and within the target of below 10 incidences. Also, the System Average Interruption Duration Index (SAIDI) in the electricity transmission network was 2.83 hours, with the target of below 6.5 hours.

The System Average Interruption Frequency Index (SAIFI) in the electricity supply network was 11 incidences and within the target of below 26 incidences. Also, the System Average Interruption Duration Index (SAIDI) in the electricity supply network was 1,129 hours, with the target of below 1,536 hours.

Four electricity generation projects with an installed capacity of 2,235.5MW were under construction by the public sector. Also, thirteen (13) electricity transmission line

projects with a route length of 2,264km were under construction by the public sector. Likewise, 39 electricity substation projects with about 3,801MVA were under construction. Furthermore, we're developing 39 electricity generation projects with a combined capacity of 196.7MW.

During the year under review, the electricity supply industry experienced several challenges, including an increase in electricity demand for social-economic development, attributed to emerging technologies, such as clean cooking, electric mobility, and standard gauge railways. To address these challenges, the government, in collaboration with stakeholders, is working to improve the sustainability of the electricity supply industry

1. INTRODUCTION

Electricity plays a vital role in socio-economic development. Thus, the Government has established institutions in the Electricity Supply Industry to ensure the availability and affordability of electricity supply services at acceptable quality standards in line with legislation and national development agendas.

The institutions include the Ministry of Energy, which provides an overall supervisory role in the electricity supply industry, EWURA for providing technical and economic regulation, REA for rural electrification, and TANESCO for conducting regulated activities. The industry also includes private entities that conduct regulated activities.

EWURA exercises its power in line with Section 5 of the Electricity Act. It awards licenses for undertaking or seeking to undertake a licensed activity, approves and enforces tariffs and fees charged by licensees, approves licensees' terms and conditions of electricity supply, and approves the initiation of the procurement of new electricity supply installations.

EWURA executes its function in line with Section 6 of the Electricity Act. It protects customers' interests through the promotion of competition, accessibility, and affordability of electricity services; least-cost investment and the security or supply; improvements in the operational of the electricity supply industry and efficiency in the use of electricity; appropriate standards of quality, reliability, and affordability of electricity supply; and environment conservation.

This report presents the electricity subsector regulatory performance updates as of December 2025, particularly in generation, transmission, distribution, supply, and cross-border trade. It is in line with Section 30 of the Electricity Act, which requires EWURA to monitor, measure, and publish the performance of the regulated entities including, but not limited to, quality, reliability, and security of supply, the progress of electrification, investment, efficiency of operations, and other standards of customer services.

2. OVERVIEW OF THE ELECTRICITY SUPPLY INDUSTRY

The overview of the electricity supply industry and its respective institutions is presented in Error! Reference source not found..

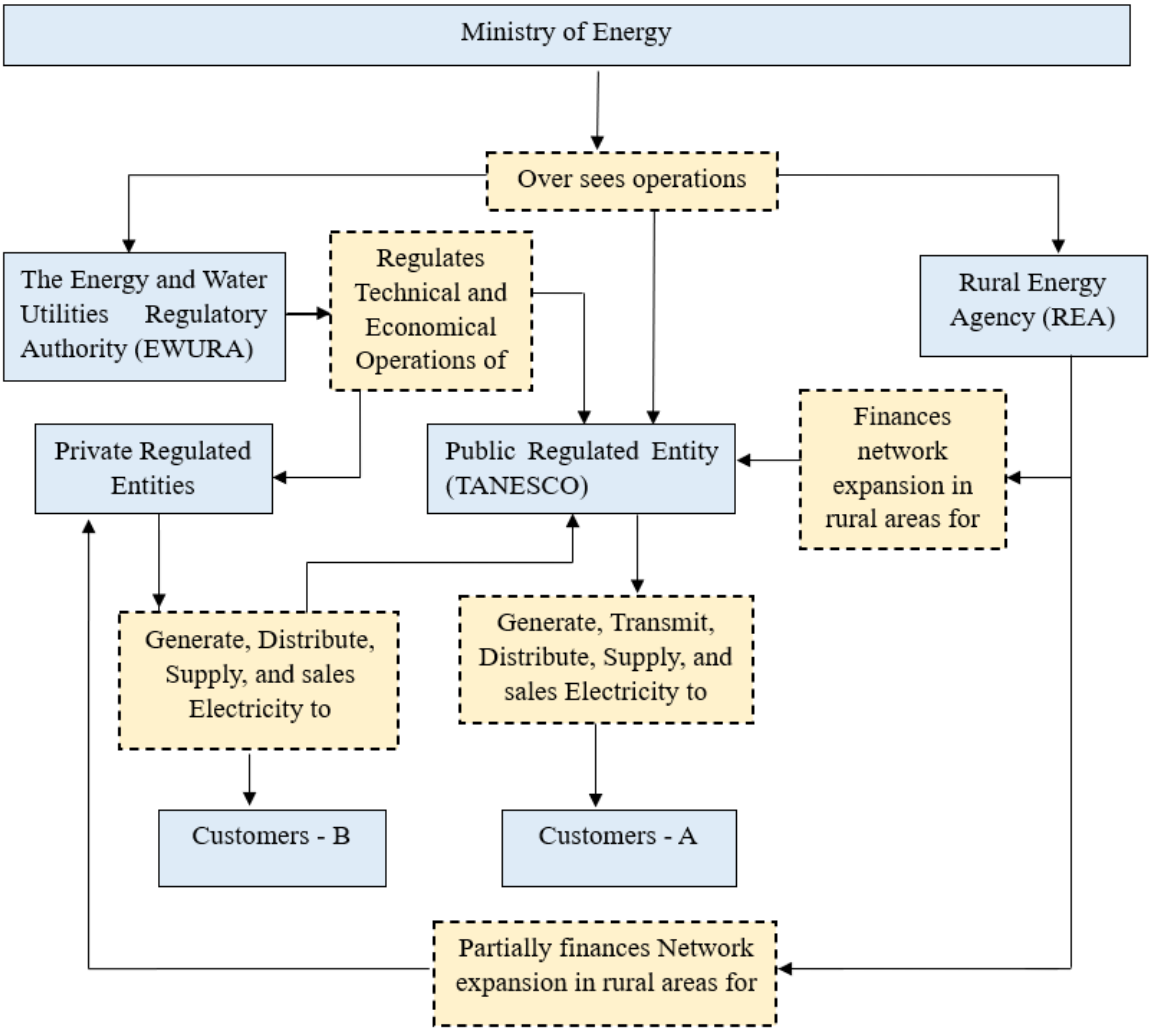


Figure 1: The Electricity Supply Industry Institutional Structure

3. REGULATORY TOOLS

The regulatory tools used to administer the electricity supply industry are presented in **Error! Reference source not found.**. Also accessible at *https://www.ewura.go.tz/electricity-regulatory-tools/*.

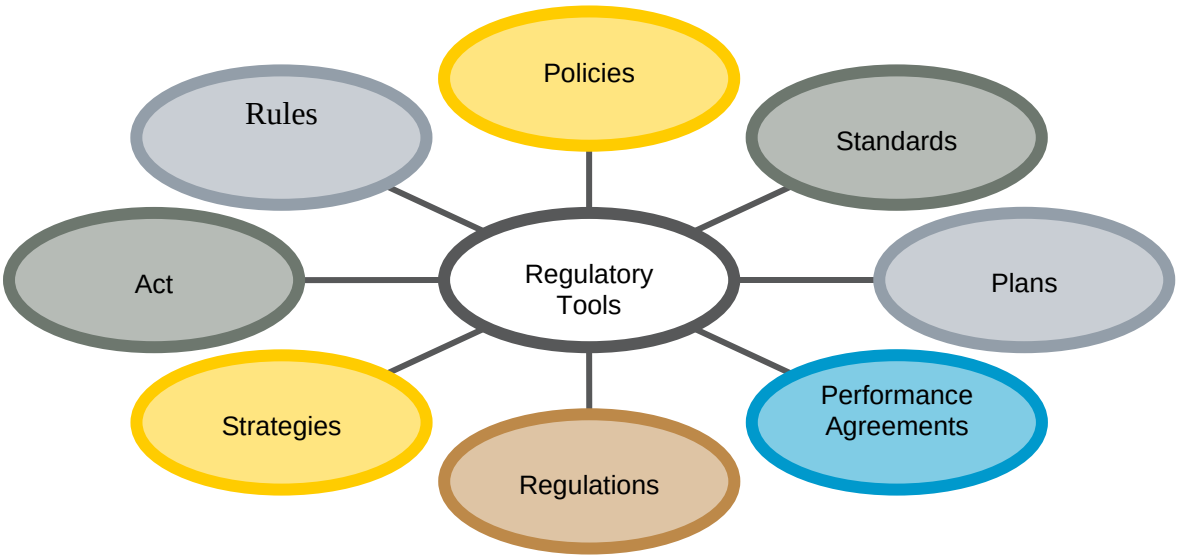


Figure 2: Regulatory Tools in The Electricity Supply Industry

4. LICENSING

A total of 9,795 licenses existed, as depicted in **Figure 3**.

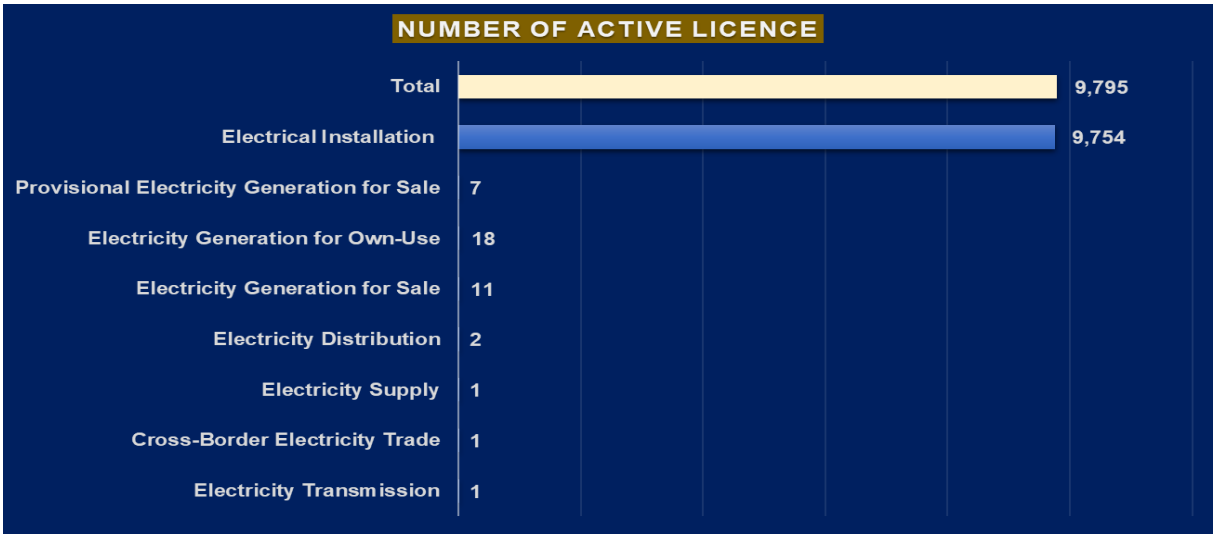


Figure 3: Activities Requiring Licence

4.1 Licensed Power Plants Generating Electricity for Sale – TANESCO

TANESCO power plants account for 2,849.49MW of installed capacity as depicted in **Figure 4**.

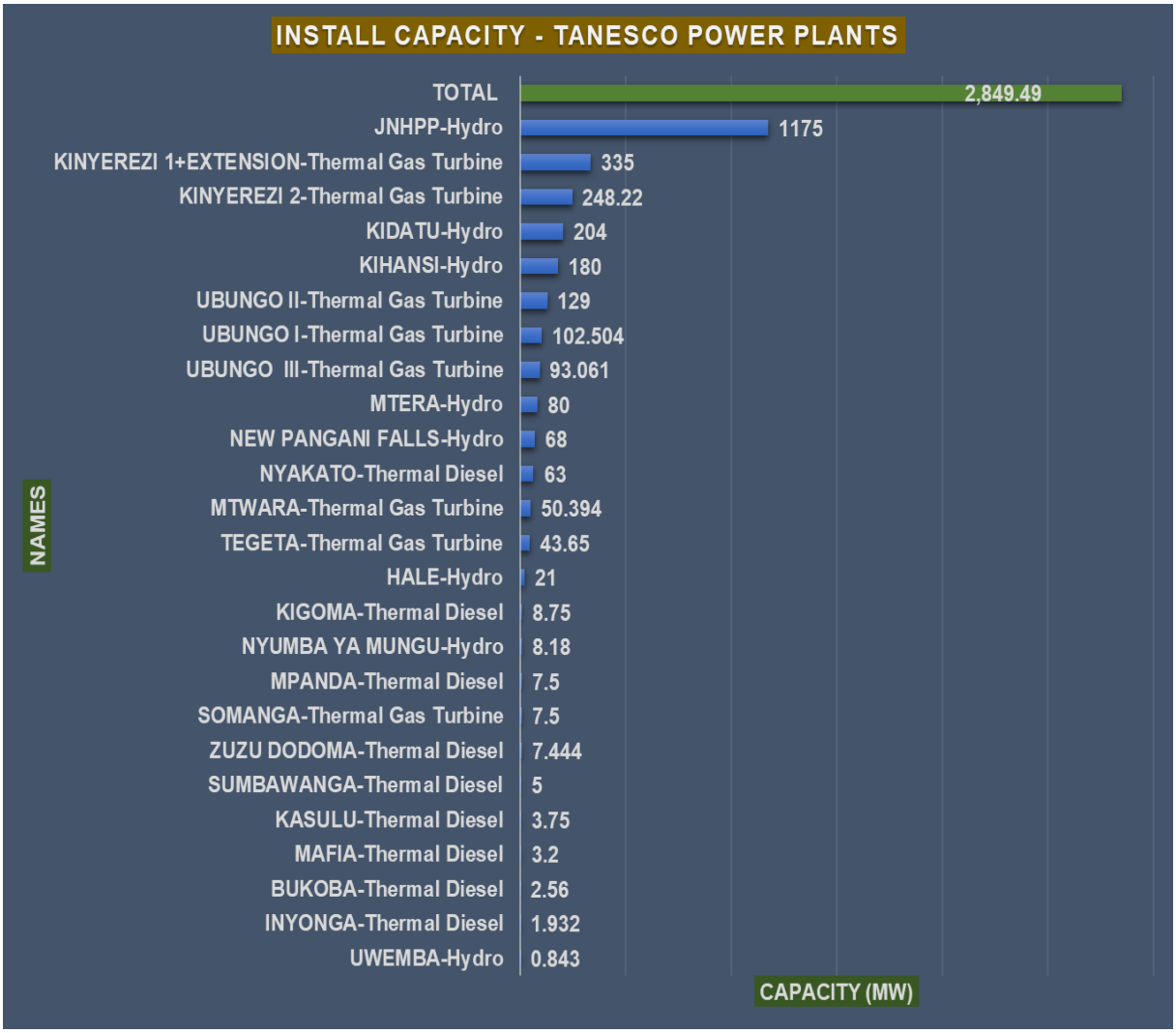


Figure 4: Licensed Power Plants Generating Electricity for Sale – TANESCO

4.2 Licensed Power Plant Generating Electricity For Sale – Private Entities

Private entities licensed to generate electricity for sale had an installed capacity of 235.31MW as in **Figure 5**.

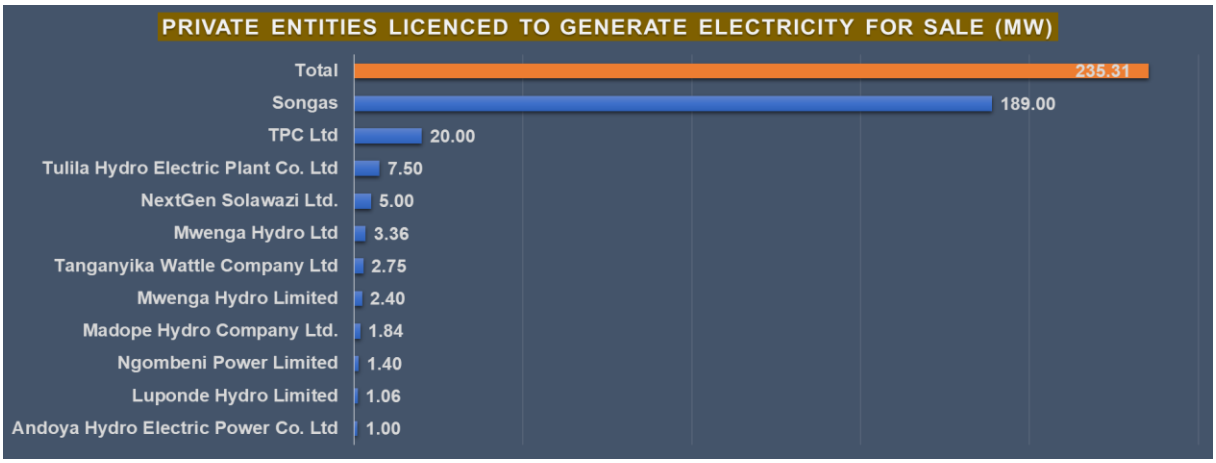


Figure 5: Private Entities Licensed to Generate Electricity for Sale (MW)

4.3 Licensed Power Plant Generating Electricity for Own Use – Private Entities

Private entities licensed to generate electricity for their use are depicted in **Figure 6**.

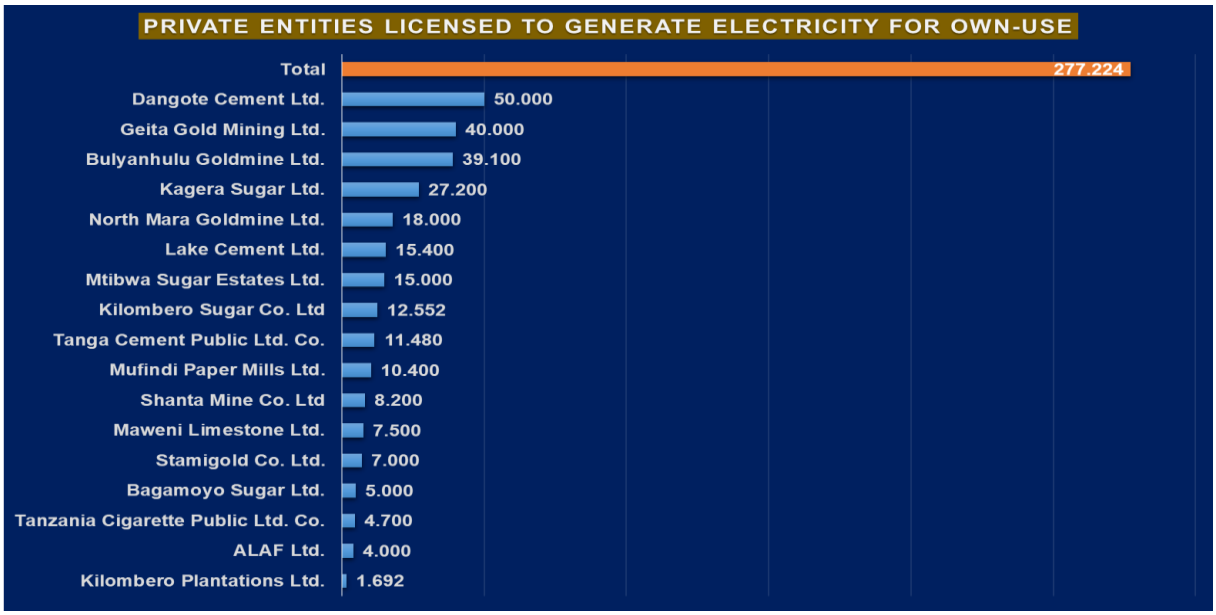


Figure 6: Private Entities Licensed to Generate Electricity for Their Own Use (MW)

5. REGISTRATIONS

Thirteen (13) entities with a combined capacity of 6,408KW are registered to generate electricity, with operations spread across 126 sites, each generating less than one megawatt as indicated in **Figure 7**.

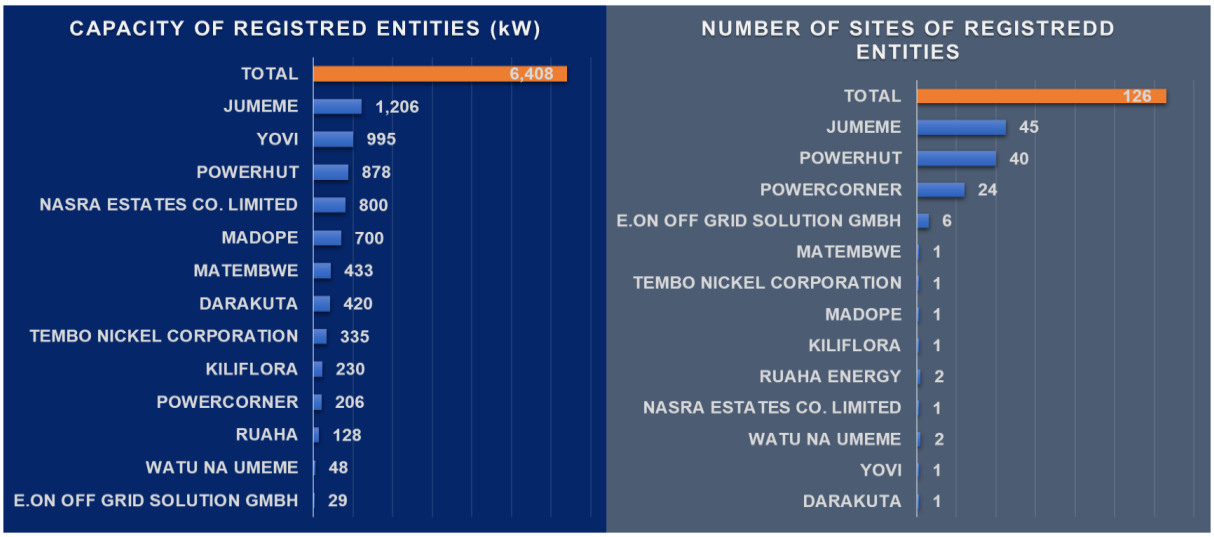


Figure 7: Registered Entities Generating Electricity below 1MW

6. THE INITIATION OF PROCUREMENT OF ELECTRICITY SUPPLY INSTALLATIONS

Four (4) projects with a potential of 736MW have been approved for the construction of power plants as in **Figure 8**.

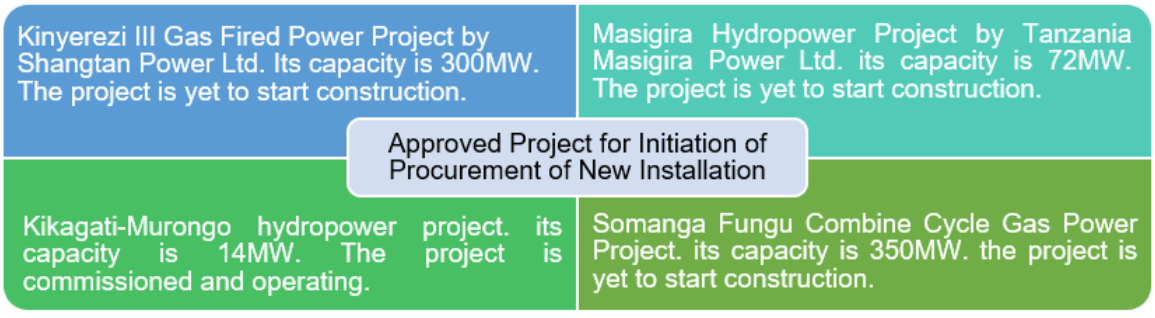


Figure 8: Approved Project for Initiation of Procurement of New Installation of The Electricity Supply

7. POWER PURCHASE AGREEMENTS

A total of sixty (60) active Power Purchase Agreements (PPA) exist with a combined capacity of 457.125MW, as depicted in **Figure 9Error! Reference source not found.**. The operating PPAs are in **Figure 10**. The PPA, whose power plants are at different stages of construction, are in **Figure 11**.

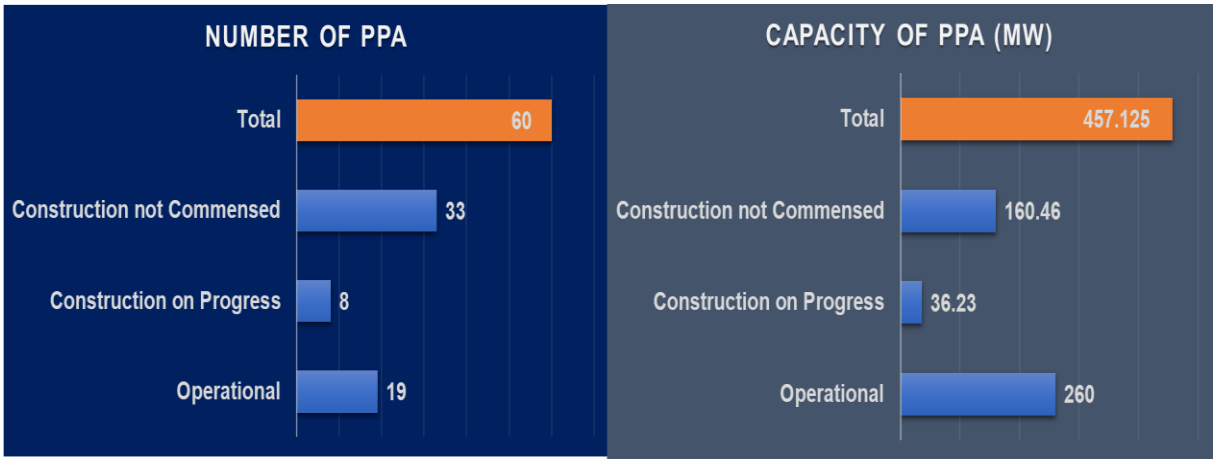


Figure 9: Approved Power Purchase Agreements (PPAs)

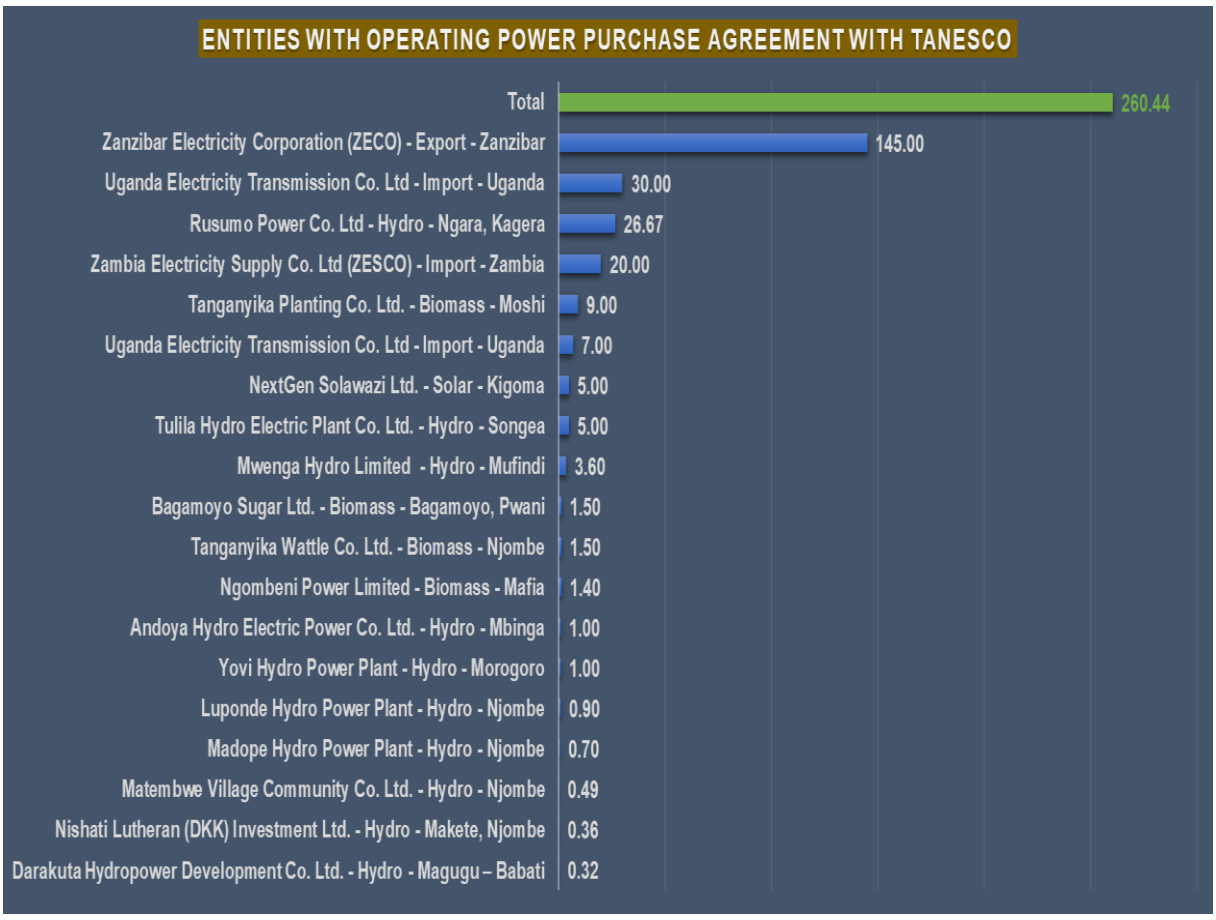


Figure 10: Entities with Operating Approved Power Purchase Agreements with TANESCO

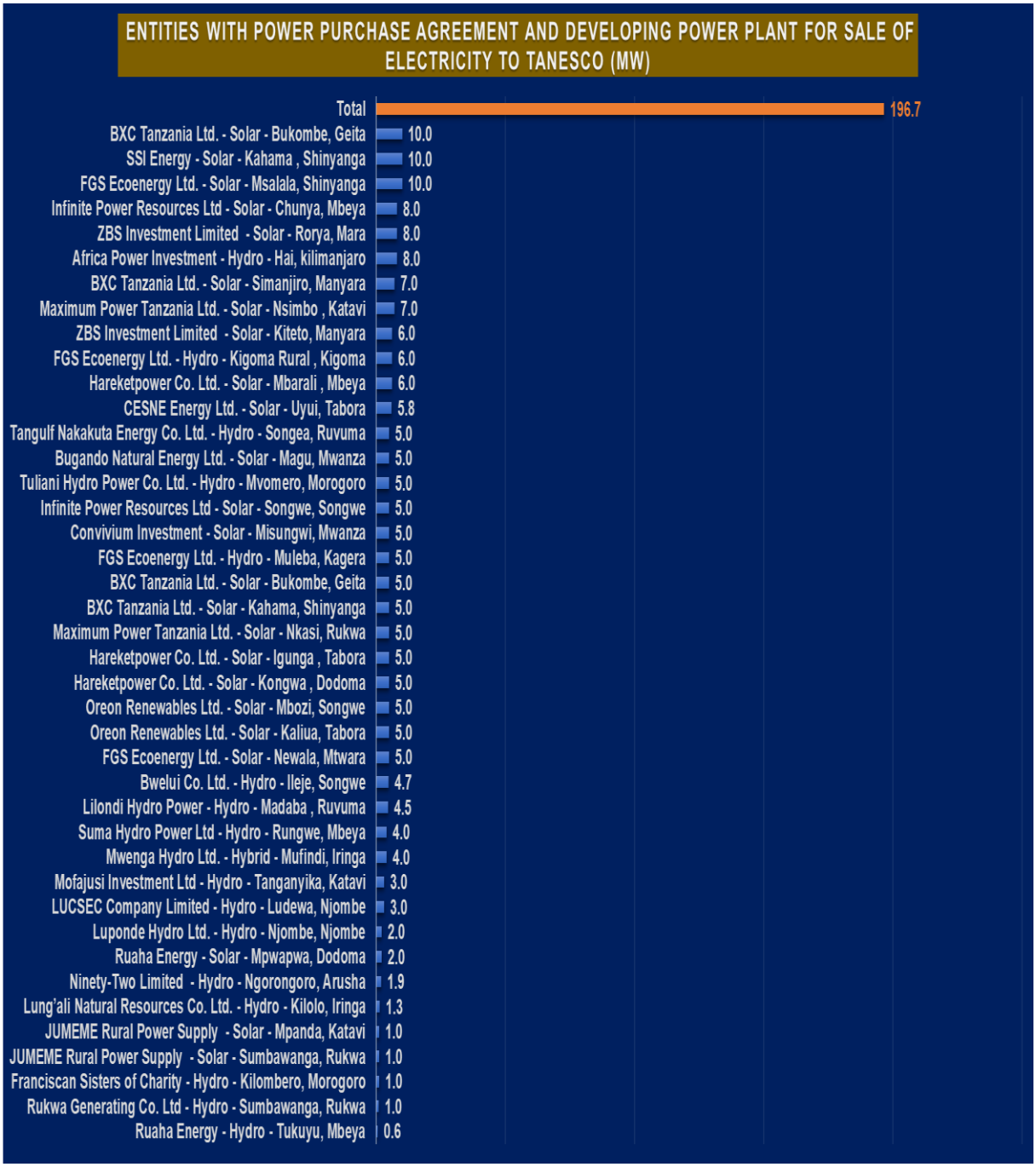


Figure 11: Entities with Power Purchase Agreements and Developing Power Plants for Sale of Electricity To TANESCO

8. TARIFF

Utilities with tariff orders for selling electricity to respective customers are in **Figure 12**. Also, categories of indicates tariff to generate (100kW—10MW) electricity and sell to the grid is depicted in **Figure 12**. Details are accessible at https://www.ewura.go.tz/wp-content/uploads/2019/07/The-Electricity-Standardized-Small-Power-Projects-Tariff-Order-2019-GN-No.-464.pdf.

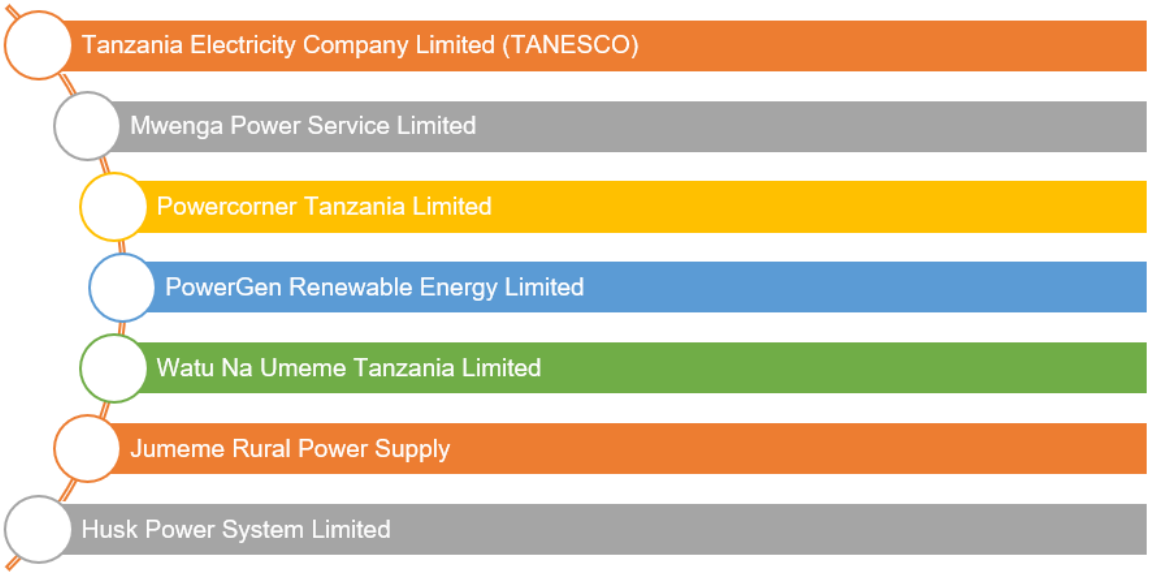


Figure 12: Utilities with Tariffs to Sell Electricity to End-User Customers

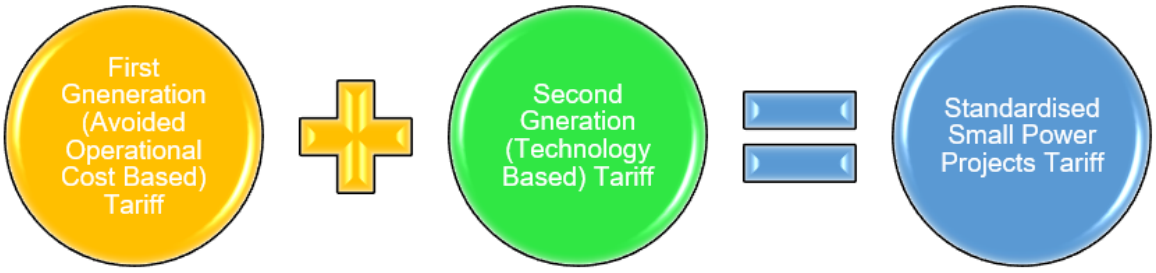


Figure 13: Tariff Category for Standardized Small Power Projects Tariff

9. COMPLAINTS AND DISPUTE RESOLUTION

A total of 44 complaints and disputes were resolved. The nature of complaints is depicted in **Figure 14**.

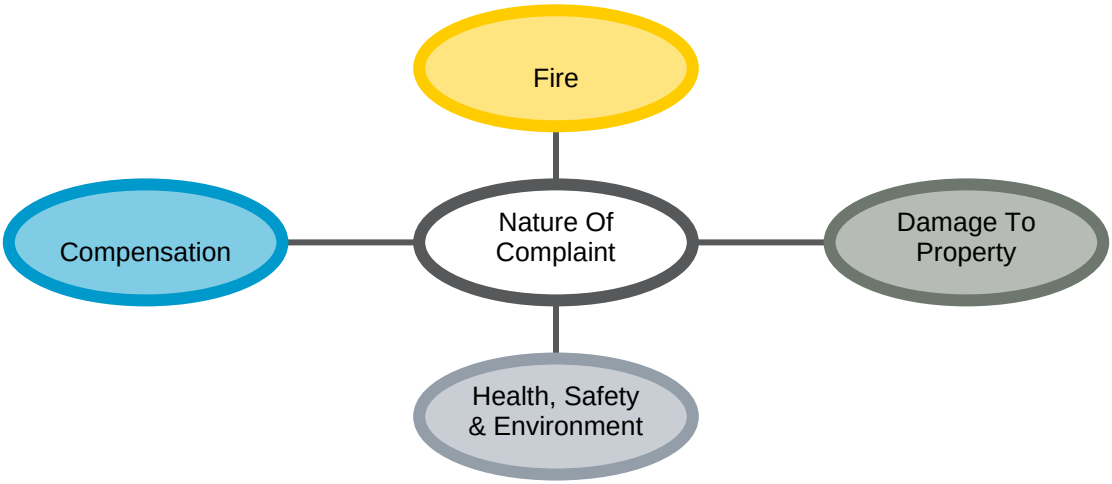


Figure 14: Nature of Complaint

10. ELECTRICITY GENERATION

The electricity generation segment is continuously developing. This is observed in the growth of the installed capacity and demand, among others.

10.1 Installed Capacity

The installed capacity reached 3,360.80MW as depicted in **Table 1**.

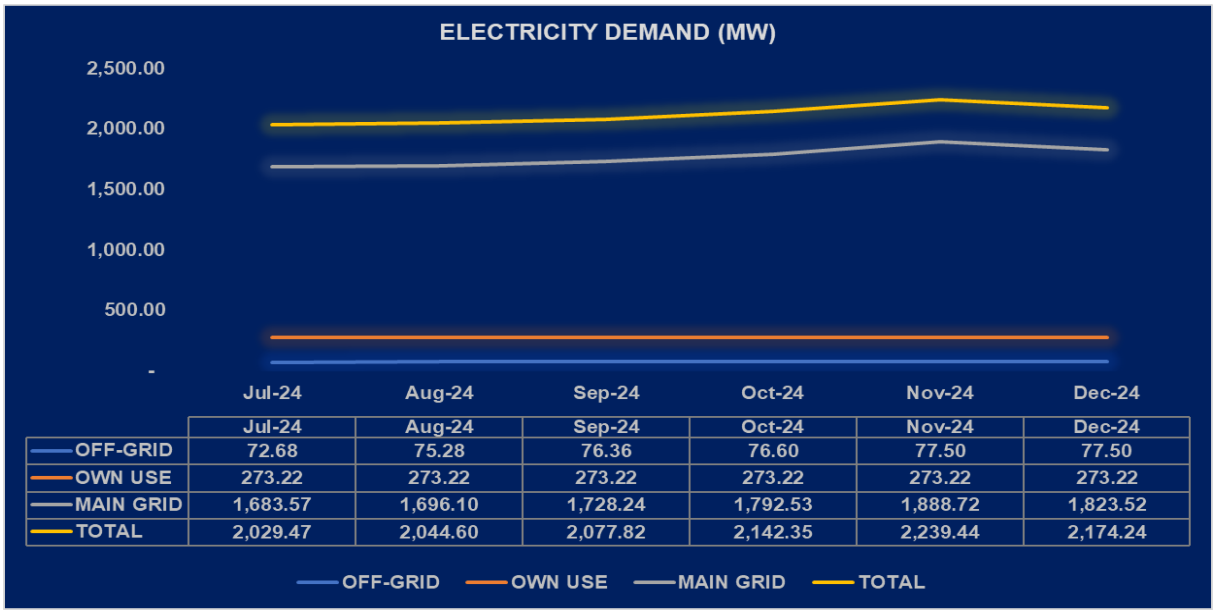
Table 1: **Summary of Installed Capacity for Licensed Entities**

Description	Entity	Capacity (MW)	Percentage (%)	% Share
Main Grid for Sale	TANESCO	2,836.95	93.04%	90.73%
	IPP (SONGAS)	189	6.20%	
	SPP owned by private entities	23.26	0.76%	
	Total	**3,049.21**	**100.00%**	
Off Grid for Sale	TANESCO	28.942	75.42%	1.14%
	SPP owned by private entities	7.4	19.28%	
	VSPP owned by private entities	2.03	5.29%	
	Total	**38.372**	**100.00%**	
own-use	Private Entities	273.22		8.13%
	Total	**273.22**		
Total	TANESCO	2,865.89	92.82%	100.00%
	IPP (SONGAS)	189	6.12%	
	SPP (all private entities)	30.66	0.99%	
	VSPP (all private entities)	2.03	0.07%	
	own-use (Private Entities)	273.22	**8.85%**	
	Total	**3,360.80**	**108.85%**	

Source: *EWURA & TANESCO*

10.2 Electricity Demand

The Electricity demand reached 2,239.44MW in November 2024 as in **Figure 15**.



	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24
OFF-GRID	72.68	75.28	76.36	76.60	77.50	77.50
OWN USE	273.22	273.22	273.22	273.22	273.22	273.22
MAIN GRID	1,683.57	1,696.10	1,728.24	1,792.53	1,888.72	1,823.52
TOTAL	2,029.47	2,044.60	2,077.82	2,142.35	2,239.44	2,174.24

Figure 15: Electricity Demand

10.3 Reserve Margin

The reserve margin was 38% of the installed capacity, as depicted in **Figure 16**. It is equivalent to 1,074MW.

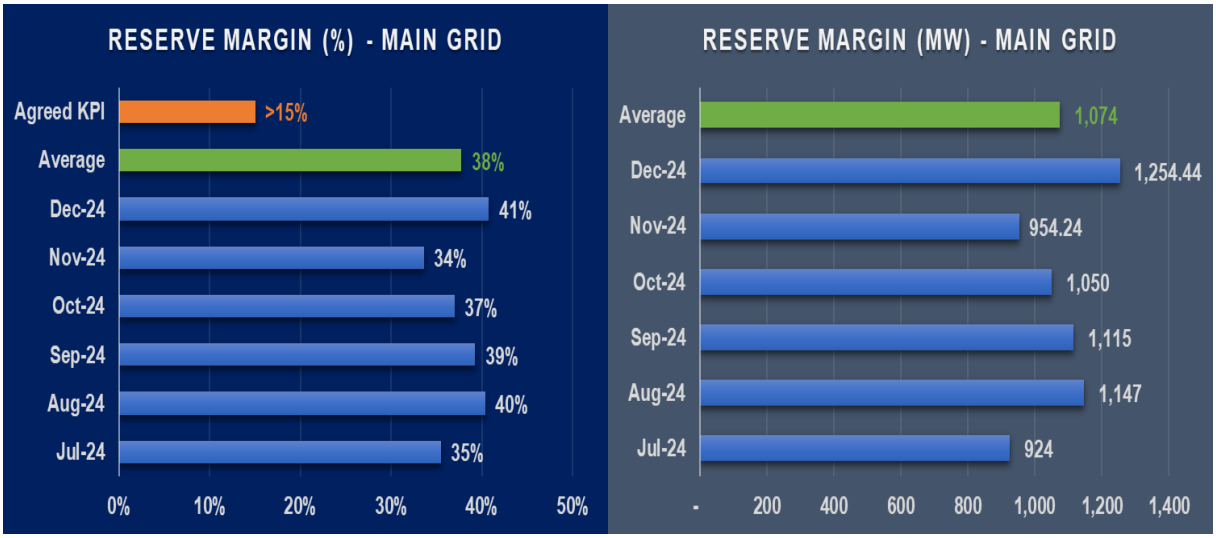


Figure 16: Reserve Margin

10.4 Energy Generation Mix Main Grid

The energy generation mix is depicted in **Figure 17**. Hydro shares the highest at 62.2%.

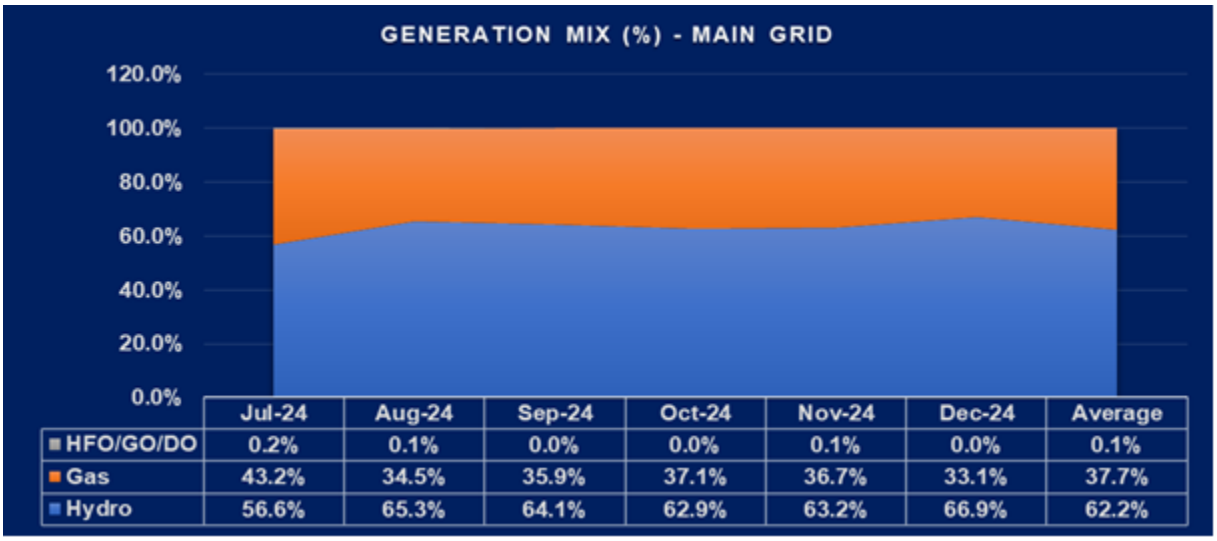


Figure 17: Energy Generation Mix (%)

10.5 Energy Generation and Imports

The energy generated and imported was 6,394.55 GWh, as depicted in **Table 2**.

Table 2: Electricity Generation and Imports

		July	August	September	October	November	December	Total
Description	Utility	Energy (GWh)	Energy (GWh)	Energy (GWh)	Energy (GWh)	Energy (GWh)	Energy (GWh)	Energy (GWh)
Main Grid	TANESCO	902.90	955.26	914.87	982.07	1,059.42	1,050.45	5,864.98
	IPP (SONGAS)	69.33	39.64	64.59	72.93	-	-	246.50
	SPP owned by private entities	3.30	3.60	7.41	8.59	6.59	7.83	37.32
	Total Main Grid	**975.53**	**998.50**	**986.87**	**1,063.59**	**1,066.01**	**1,058.28**	6,148.79
Off-Grid	TANESCO	8.15	8.04	8.04	8.66	8.14	4.42	45.45
	SPP owned by private entities	1.15	1.15	1.15	1.15	1.15	1.15	6.88
	VSPP owned by private entities	0.34	0.34	0.34	0.34	0.34	0.34	2.05
	Total Off-Grid	**9.64**	**9.52**	**9.53**	**10.14**	**9.62**	**5.91**	54.38
Imports	Kigagati (Uganda)	3.41	3.34	3.26	3.14	3.41	3.49	20.05
	kyaka (Uganda)	13.09	13.36	13.31	14.45	12.53	9.92	76.67
	Mbala (Zambia)	5.89	6.02	5.88	5.71	5.66	5.72	34.88
	Rusumo Power Company Limited	3.70	11.45	10.28	8.70	10.73	14.91	59.78
	Total Imports	**26.09**	**34.17**	**32.74**	**32.00**	**32.33**	**34.04**	191.38
Summary	TANESCO	911.05	963.30	922.92	990.73	1,067.56	1,054.87	5,910
	IPP (SONGAS)	69.33	39.64	64.59	72.93	-	-	246
	SPP (all private entities)	4.45	4.75	8.55	9.73	7.73	8.98	44
	VSPP (all private entities)	0.34	0.34	0.34	0.34	0.34	0.34	2
	Imports	26.09	34.17	32.74	32.00	32.33	34.04	191
	Total Energy	**1,011.26**	**1,042.20**	**1,029.14**	**1,105.74**	**1,107.97**	**1,098.24**	**6,394.55**

Source: *TANESCO and EWURA*

10.6 Availability of Power Plants

The overall Power plant availability was 79.18%, as depicted in **Figure 18**.

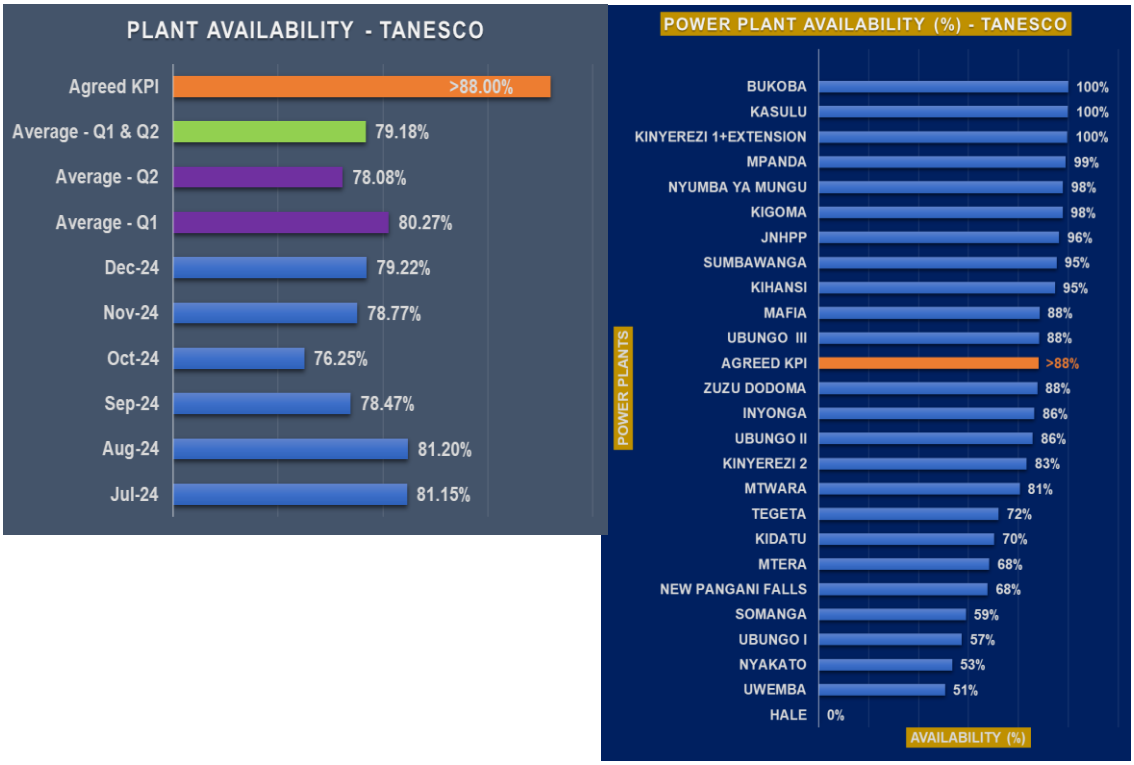


Figure 18: Power Plant Availability (%)

10.7 Power Plants Utilization

The average power plant utilization was 38.89% of the installed capacity, as depicted in **Figure 19**.

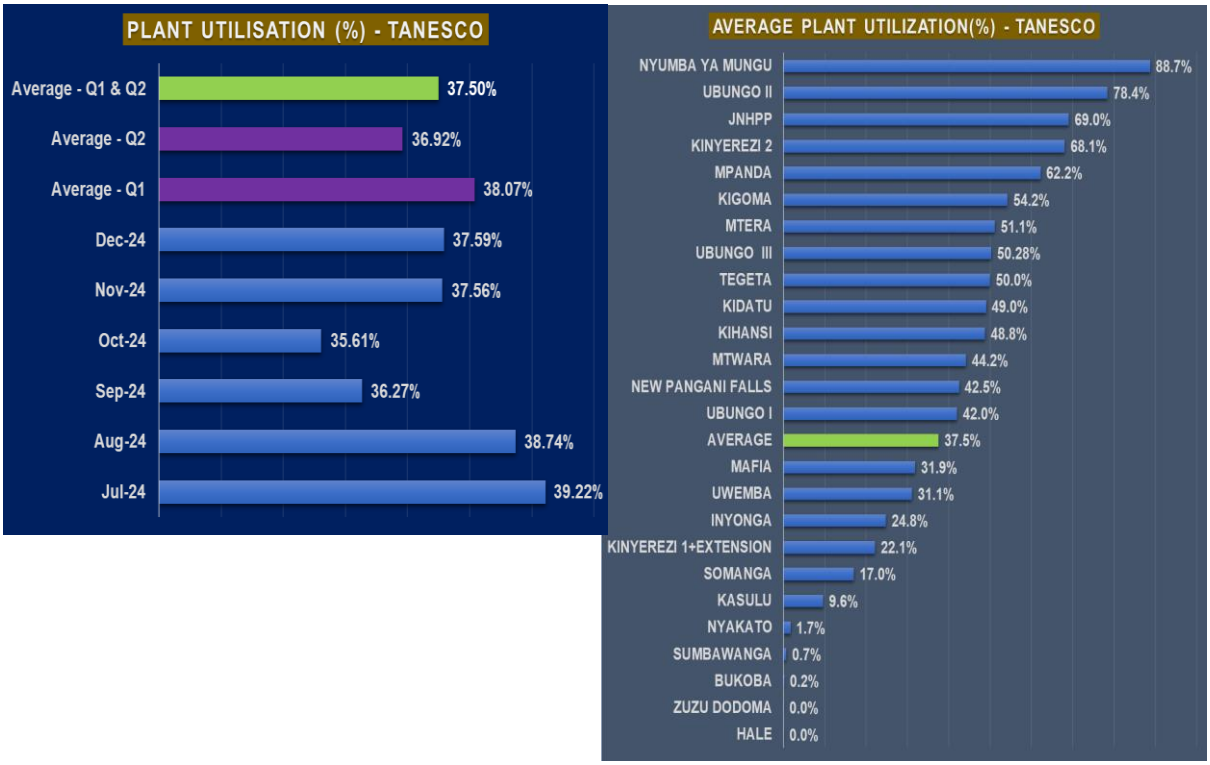


Figure 19: Power Plant Utilization (%)

11. ELECTRICITY TRANSMISSION

Electricity transmission continues to grow. This is observed in the growth of infrastructures and investments in the transmission line and substations, among others.

11.1 Electricity Transmission Infrastructure

TANESCO owns and operates a transmission route length of 8,025.38, as depicted in **Figure 20**.

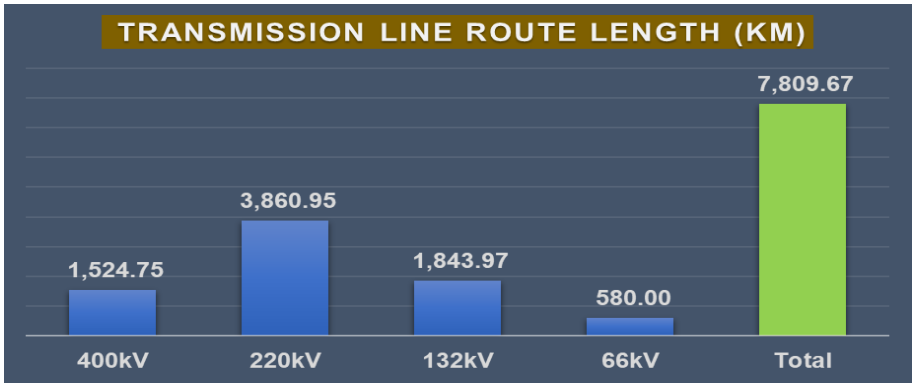


Figure 20: Transmission Line Route Length

Figure 21: Transmission Line Route Length – 400kV

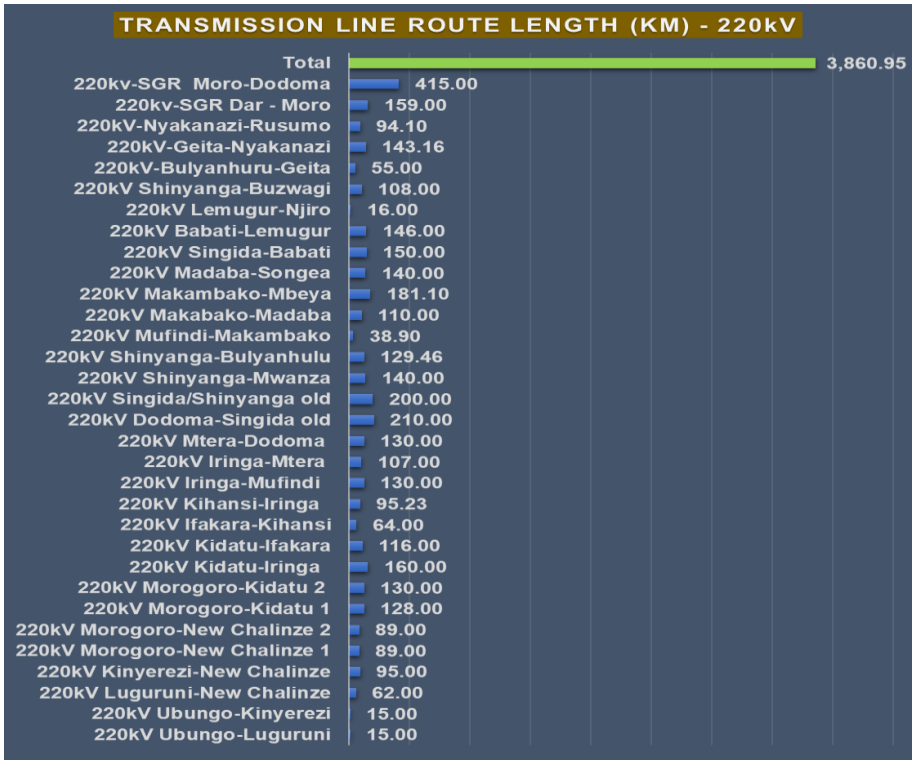


Figure 22: Transmission Line Route Length – 220kV

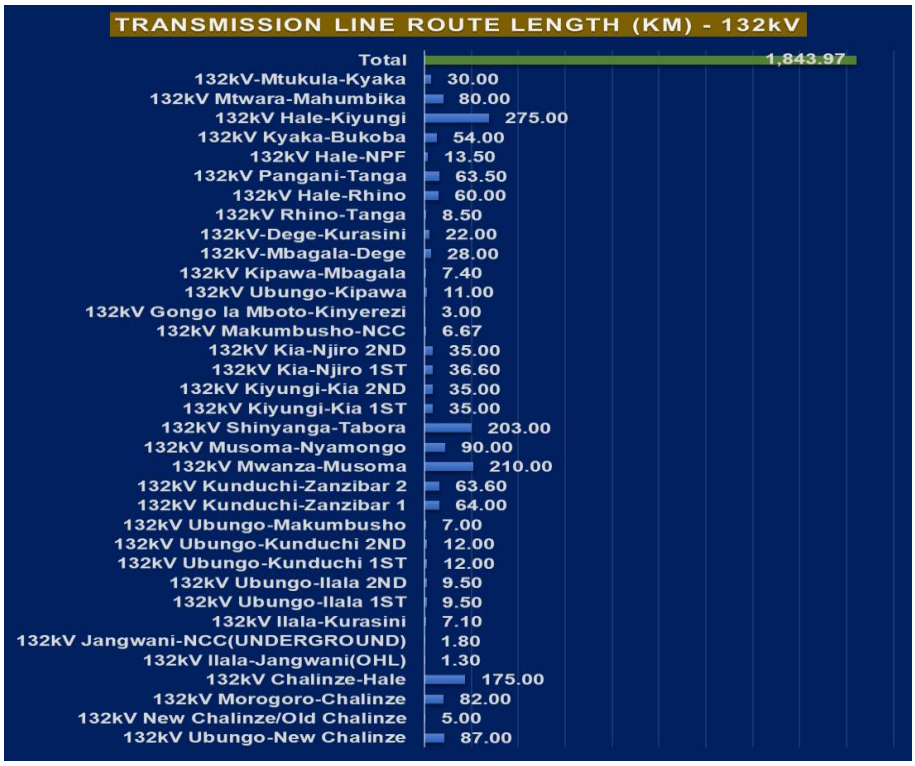


Figure 23: Transmission Line Route Length – 132kV

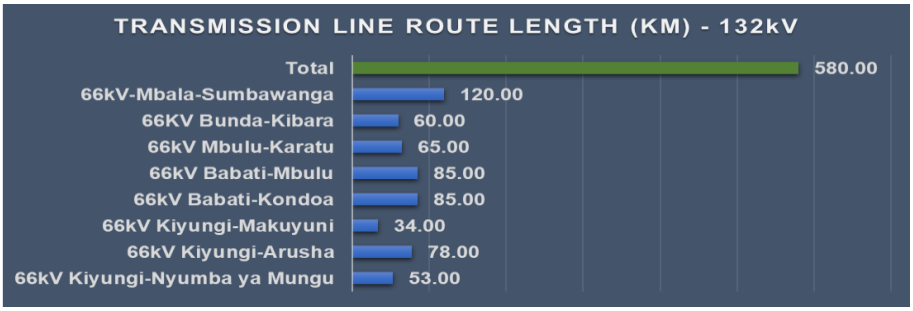


Figure 24: Transmission Line Route Length – 66kV

11.2 Customers Connected to Transmission Infrastructure

Seven (7) customers were connected to the transmission infrastructures, as depicted in **Figure 25.**

CUSTOMERS CONNECTED TO THE ELECTRICITY TRANSMISSION NETWORK							
Bulyanhulu Gold Mine (220kV)	Zanzibar Electricity Corporation (132kV)	Tanganyika Portland Cement (132kV)	Tanga Cement (132kV)	Rhino Cement (132kV)	Nyamongo Gold Mine (132kV)	Buzwagi Gold Mine (132kV)	Tanzania Rwailay Corporation (220kV)

Figure 25: Customers Connected to The Transmission Infrastructure

11.3 Reliability of Electricity Transmission Infrastructure

The System Average Interruption Frequency at the Connection Point (SAIFI-TCP) was 3.89 incidences, and the System Average Interruption Duration Index at the Connection Point (SAIDI-TCP) was 2.83 hours, as depicted in **Figure 26**.

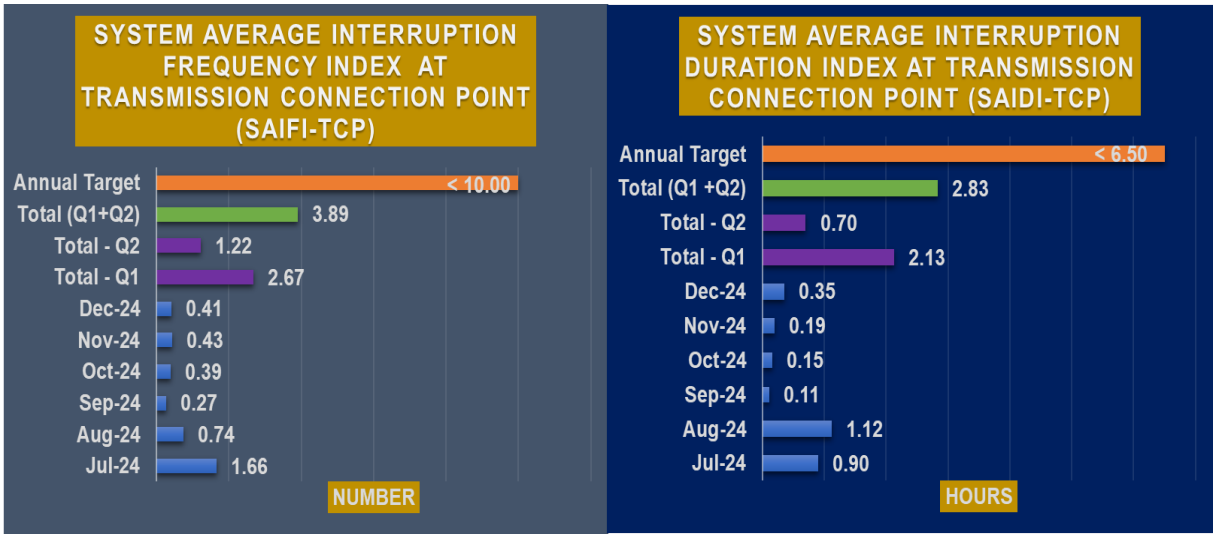


Figure 26: Reliability of Electricity Transmission Infrastructure

11.4 Unserved Energy

The unserved energy was 0.74% of the energy generated, equivalent to 45.75GWh, as depicted in **Figure 27**.

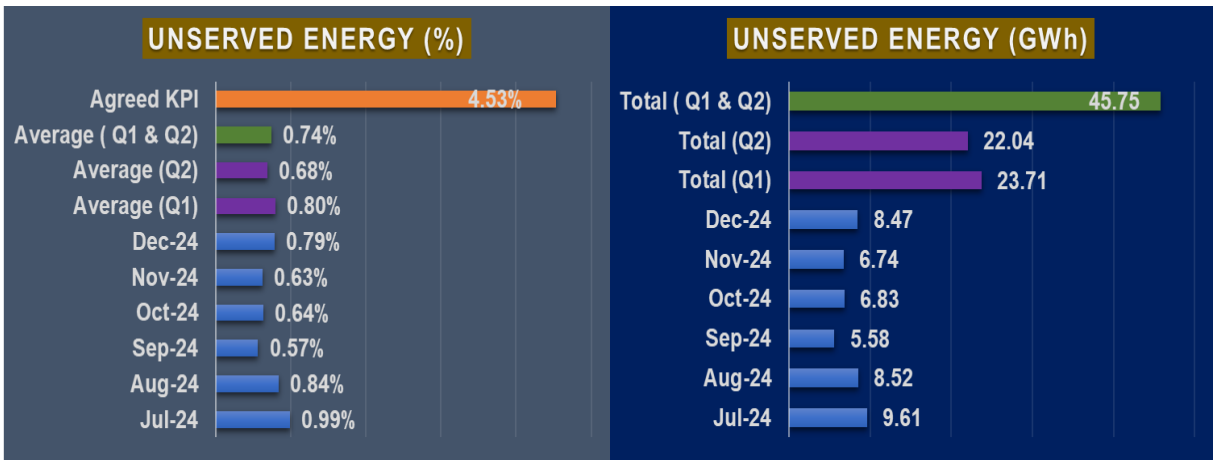


Figure 27: Unserved Energy

12. ELECTRICITY DISTRIBUTION

The electricity distribution segment continues to grow. This is observed in the growth of infrastructures and customers, among others.

12.1 Licensed Entities for Electricity Distribution Activities

Two (2) entities in **Figure 28** had a licence for electricity distribution activities (>1MW).

Figure 28: Entities Licensed for Electricity Distribution Activities

12.2 Registered Entities for Electricity Distribution Activities

Five (5) entities in **Figure 29** had registration for electricity distribution activities. Each entity's site had a capacity below one (1) megawatt.

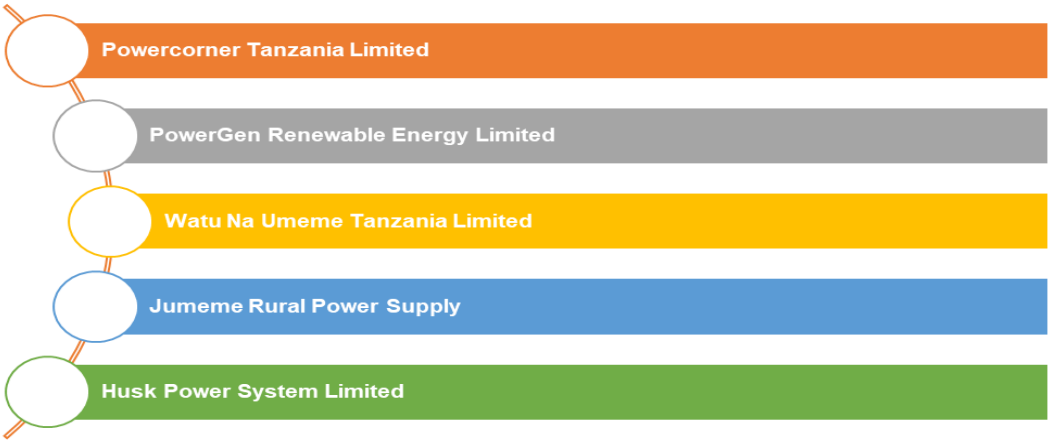


Figure 29: Entities Registered for Electricity Distribution Activities

12.3 Electricity Distribution Infrastructure

The line length was 199,974km, as depicted in **Figure 30**. The contribution of the length by TANESCO regions is depicted in **Figure 31**.

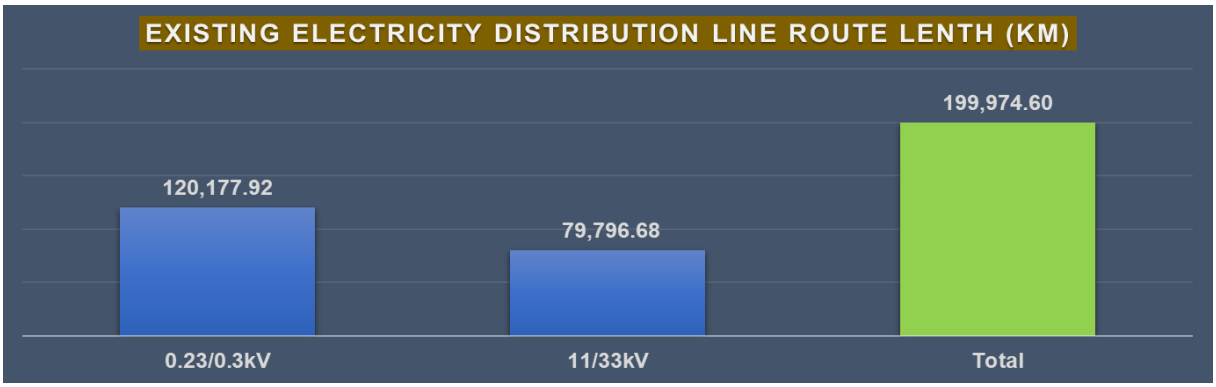


Figure 30: Existing Electricity Distribution Line Route Length (LV) – TANESCO

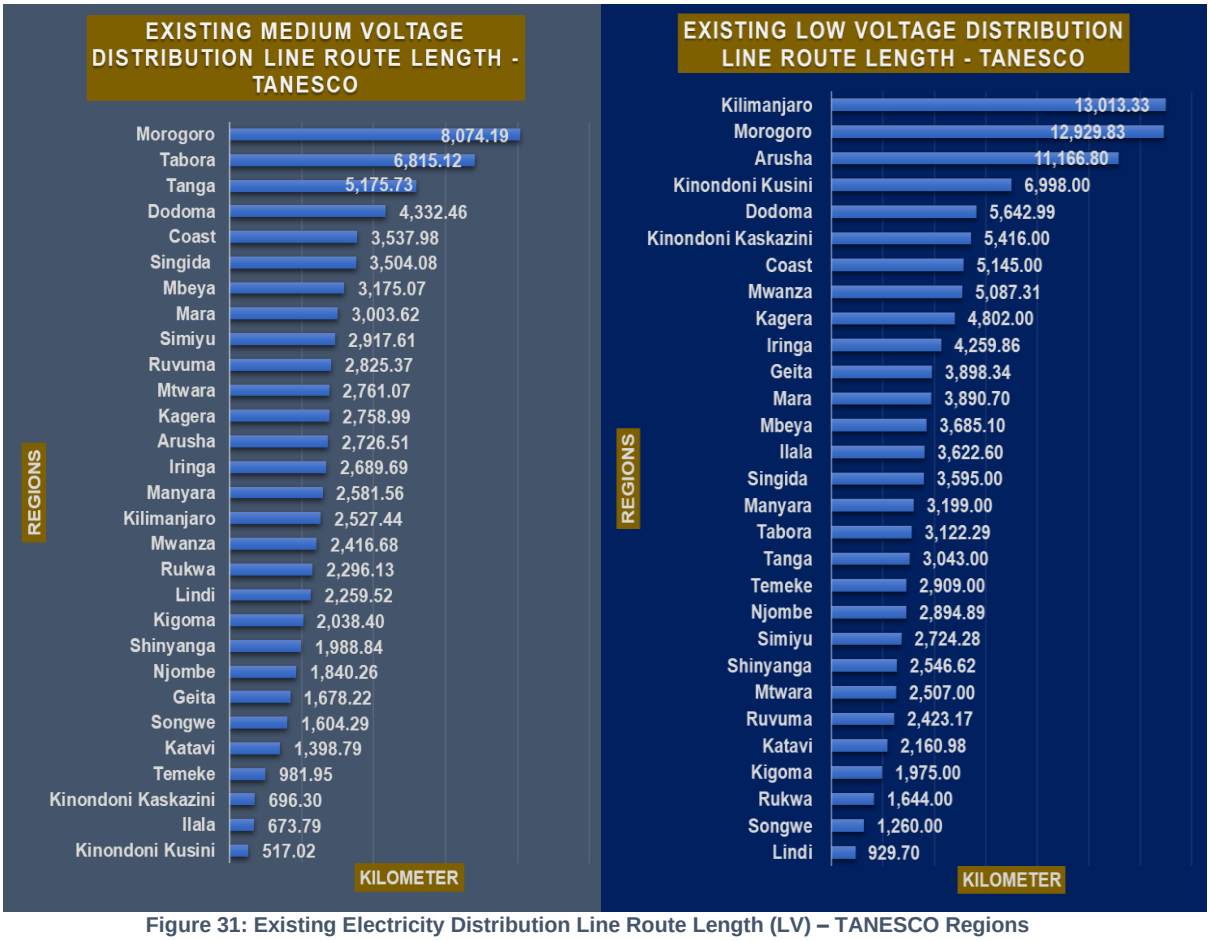


Figure 31: Existing Electricity Distribution Line Route Length (LV) – TANESCO Regions

12.4 Electricity accessibility and connectivity

The electricity accessibility reached 72%, and connectivity reached 45.80% as in **Figure 32** (*Impact of Access to Sustainable Energy Survey Report 2021/2022 - NBS*).

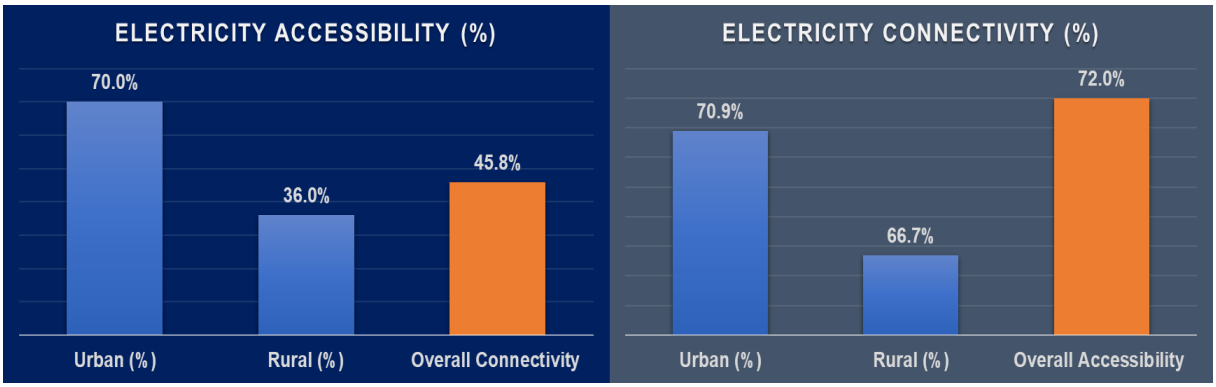


Figure 32: Electricity Accessibility and Connectivity

12.5 Customers

Customers connected was 5,225,193 as depicted in **Figure 33**.

Figure 33: Connected Customers - TANESCO

12.6 Reliability Of Electricity Supply

The performance of regulated entities was monitored to ensure improvement in the reliability of the electricity supply in line with the Key performance indicators established in the performance agreements.

12.6.1 System Average Interruption Frequency Index

The System Average Interruption Frequency Index (SAIFI) was 11 incidences as depicted in **Figure 34**.

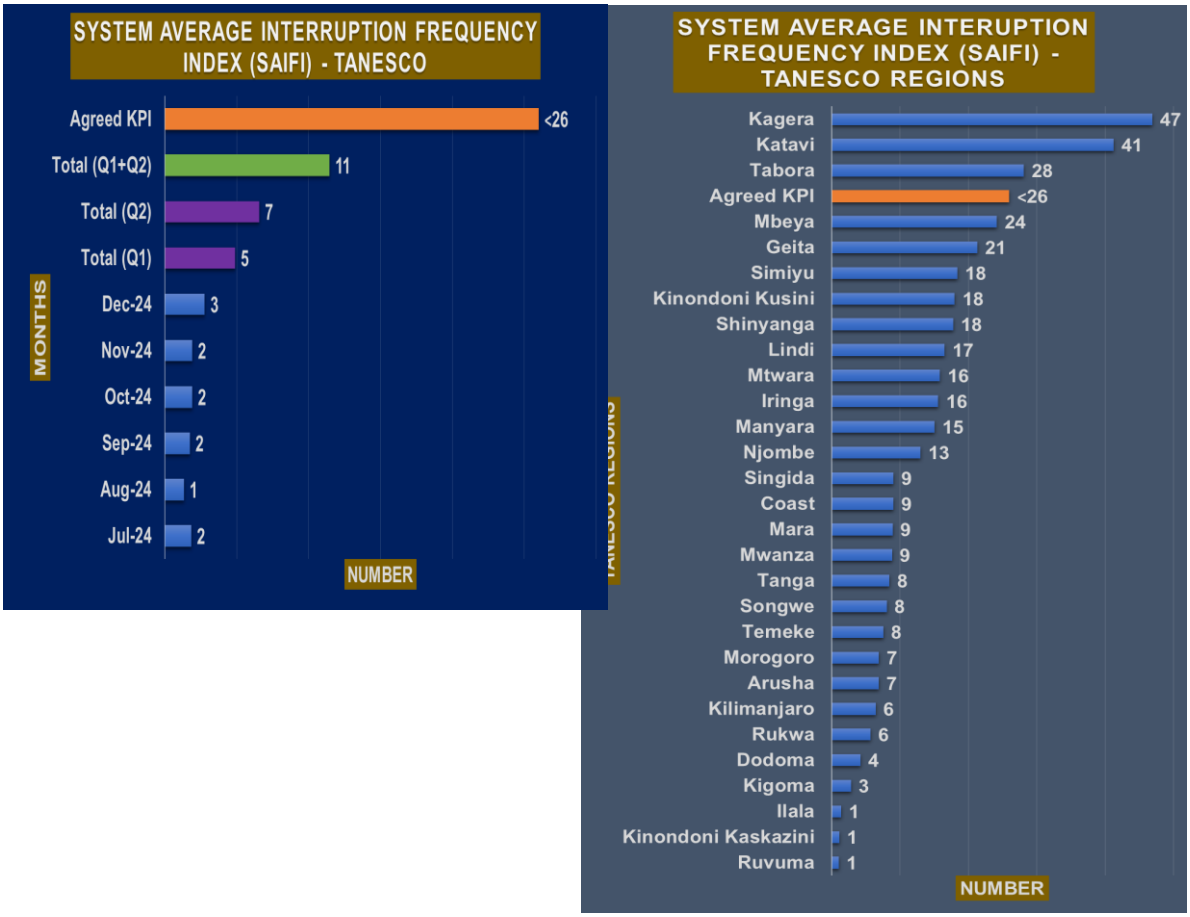
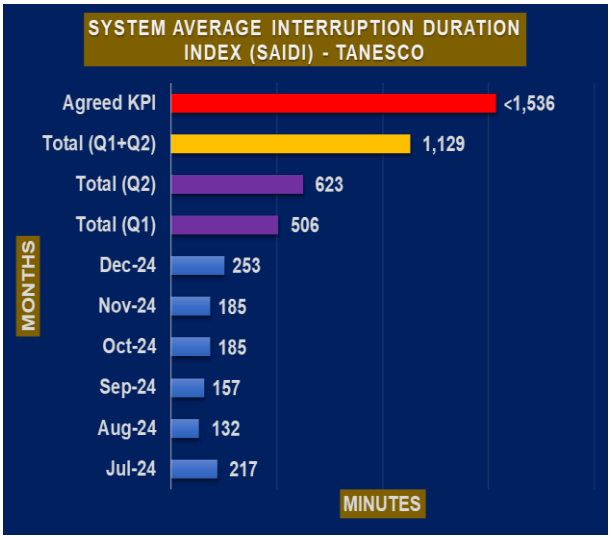


Figure 34: System Average Interruption Frequency Index (SAIFI) – TANESCO

12.6.2 The System Average Interruption Duration Index

The System Average Interruption Duration Index (SAIDI) was 1,129 minutes, as depicted in **Figure 35**.



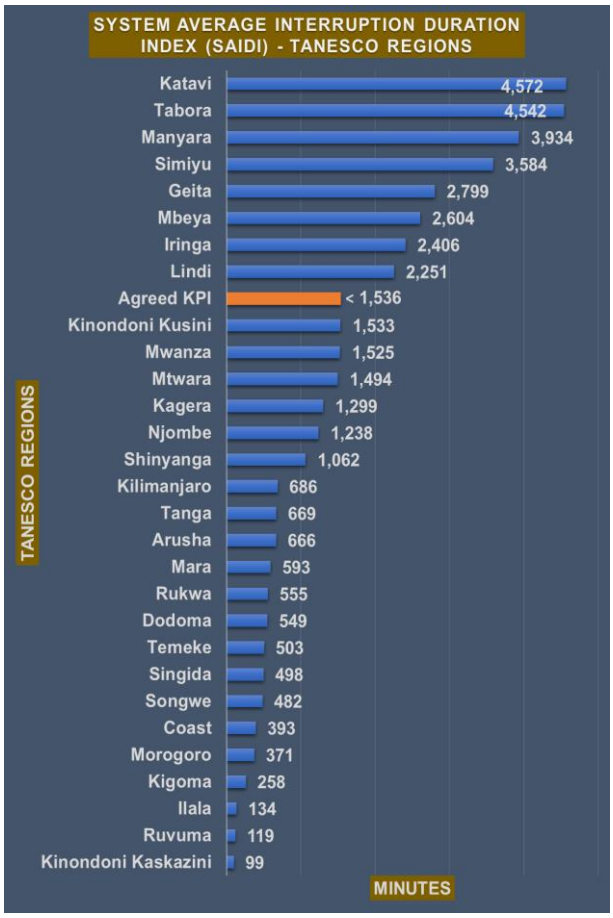
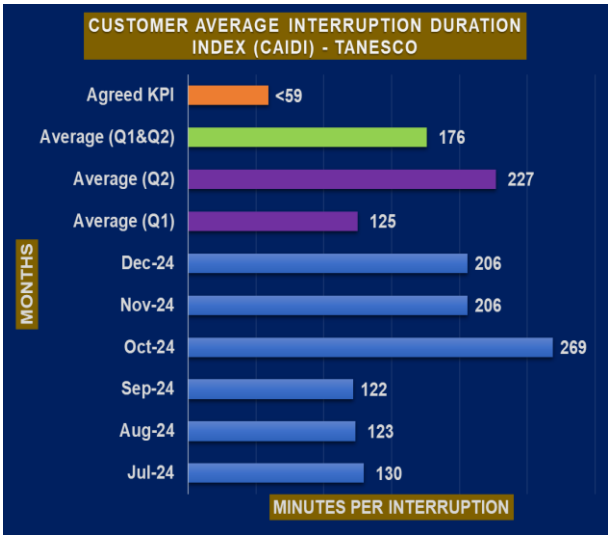


Figure 35: System Average Interruption Duration Index (SAIDI) – TANESCO

12.6.3 The Customer Average Interruption Duration Index (CAIDI)

The Customer Average Interruption Duration Index (CAIDI) was 176 minutes per interruption, as depicted in **Figure 36**.



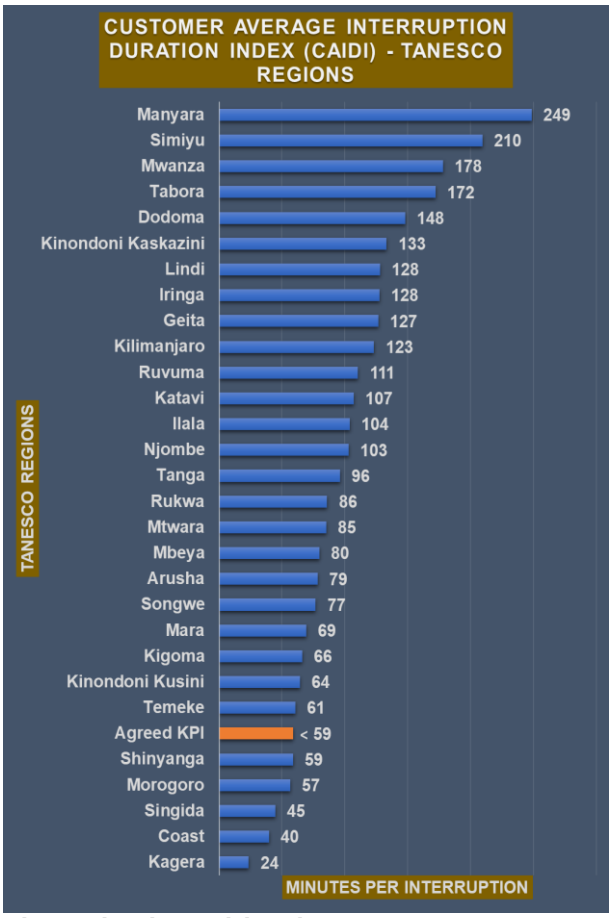


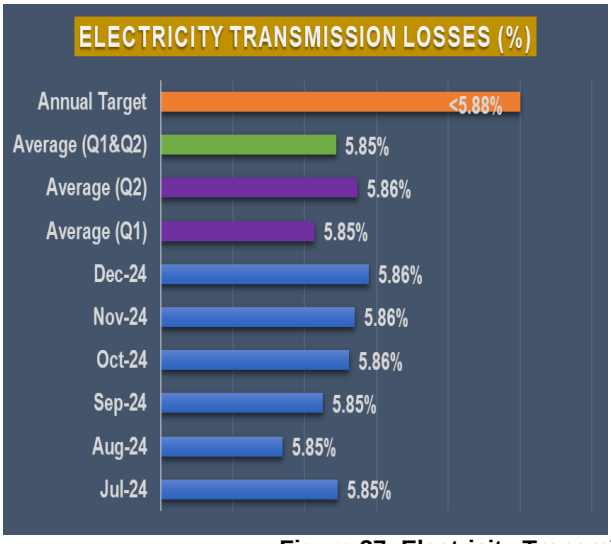
Figure 36: Customer Average Interruption Duration Index (CAIDI) in Minutes – TANESCO

13. ENERGY LOSSES

The energy losses continue to improve in line with the Key performance indicators established in the performance agreements.

13.1 Electricity Transmission Losses

The losses reached 5.85%, equivalent to 350.88GWh as depicted in **Figure 37**.



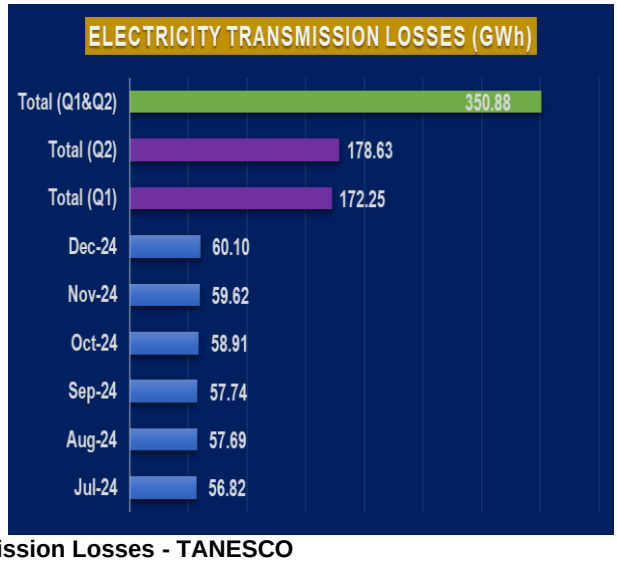
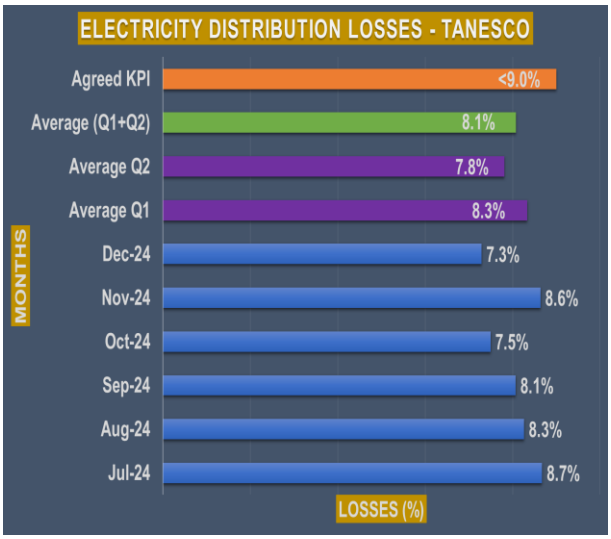


Figure 37: Electricity Transmission Losses - TANESCO

13.2 Electricity Distribution Losses

The loss was 8.1%, as depicted in **Figure 38**. It is equivalent to 360.58GWh as in **Figure 38**.



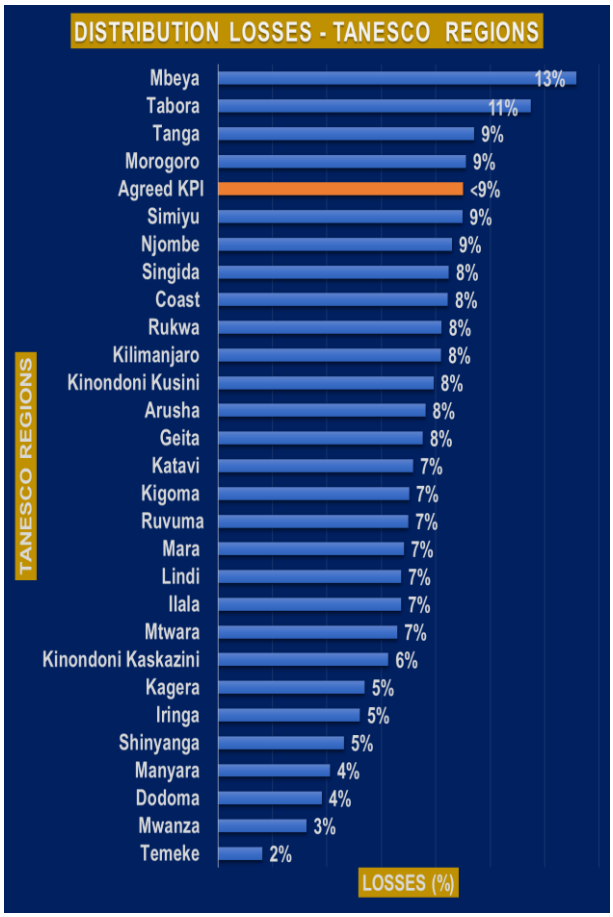
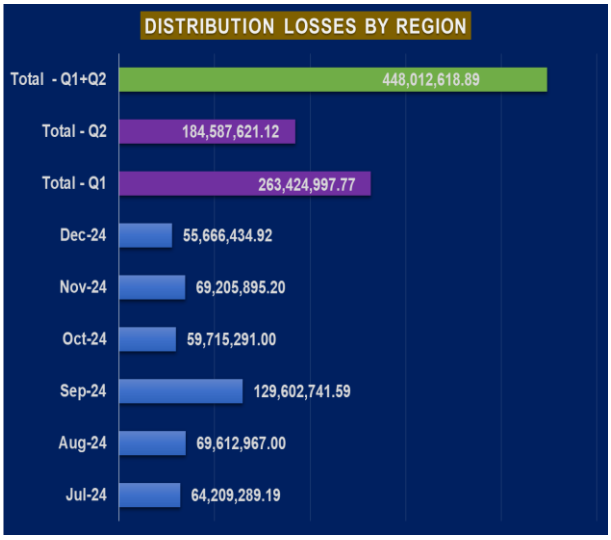


Figure 38: Electricity Distribution Losses (%) - TANESCO



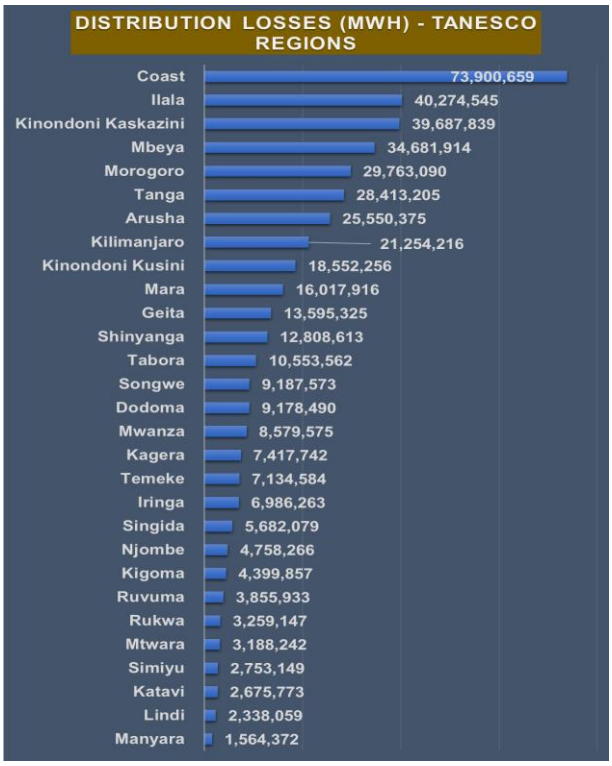


Figure 39: Electricity Distribution Losses (MWh) – TANESCO

14. CUSTOMER SERVICES

The customer services continue to grow in line with the performance agreements.

14.1 Timely Attending to Customers' Calls for Temporary Breakdowns

98% of customers' calls to fix temporary breakdowns were attended to on time, as depicted in **Figure 40**.

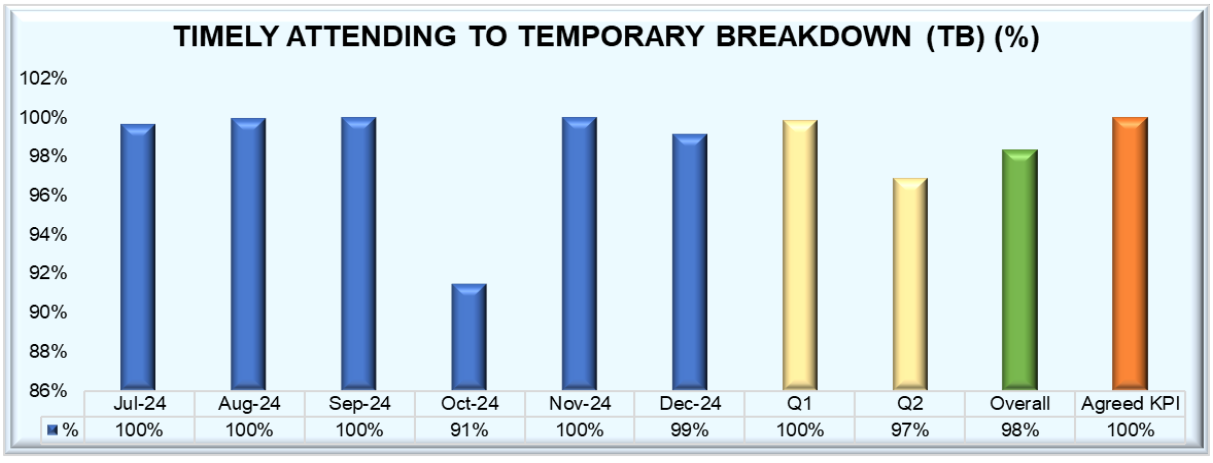


Figure 40: Timely Attending to Customers' Temporary Breakdown – TANESCO

14.2 Timely Issuance of Quotation for Customer Connection

94% of quotations for customer service line applications for power connection were issued on time, as depicted in **Figure 41**.

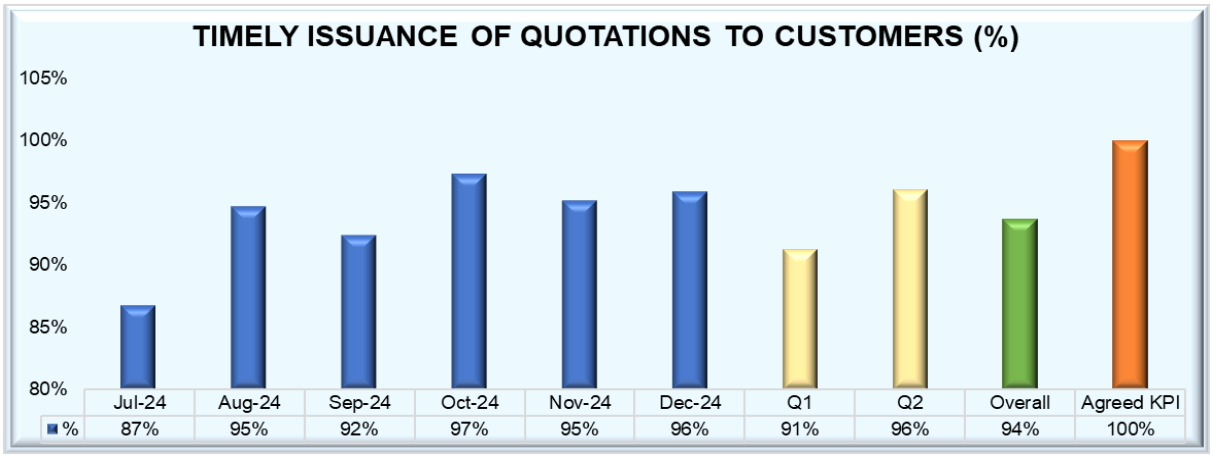


Figure 41: Timely issuance of quotation for customer connection – TANESCO

14.3 Timely Construction of Service Line

97% of customer service line applications for power connection were constructed on time, as depicted in **Figure 42**.

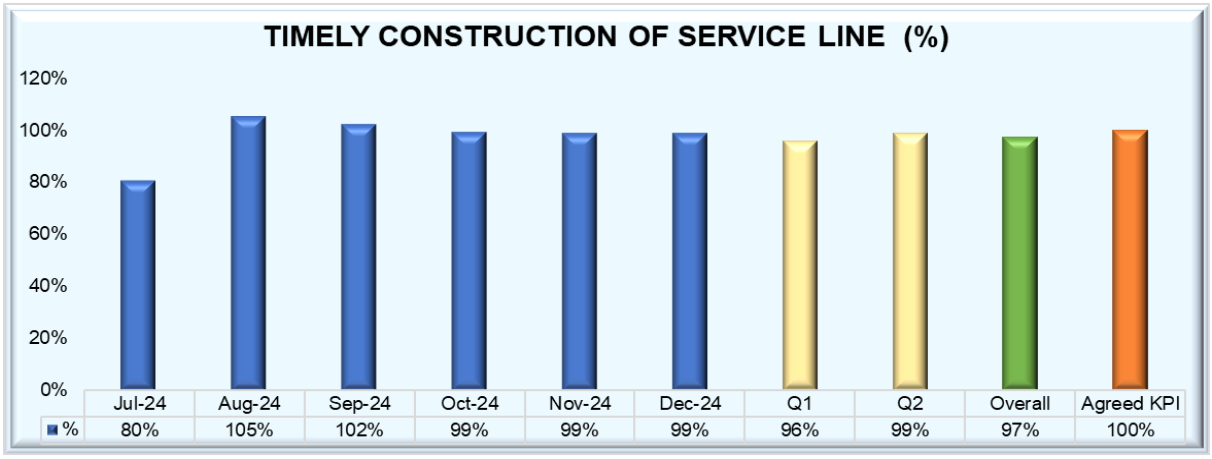


Figure 42: Timely Construction of Customer Service Line for Power Connection – TANESCO

14.4 Timely Response to Written Customer Complaints

100% of customers' written complaints were responded to on time, as depicted in **Figure 43**.

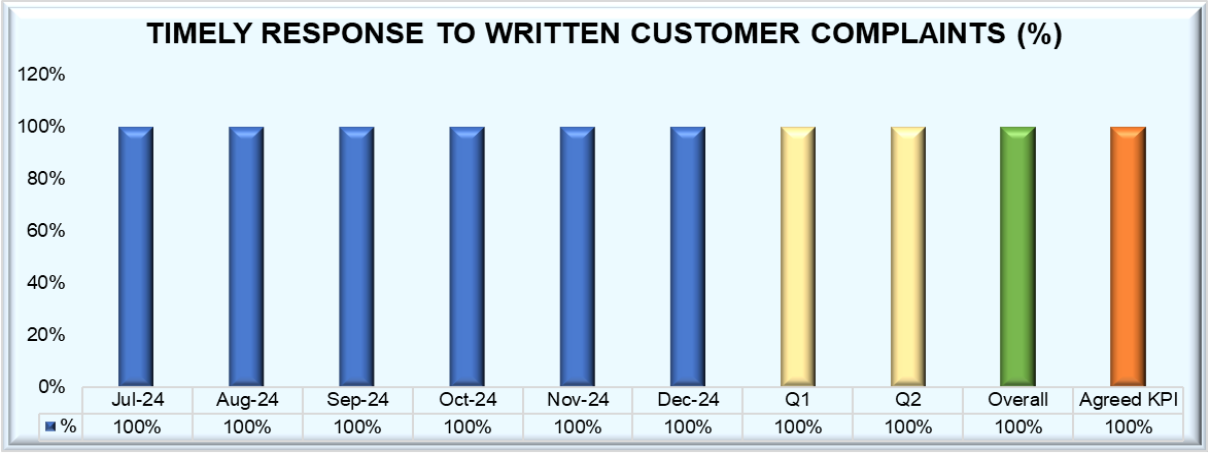


Figure 43: Timely Response to Customers' Written Complaints – TANESCO

14.5 Meetings With Customer Representatives

100% of planned and publicized meetings with customer representatives were conducted on time, as depicted in **Figure 44**.

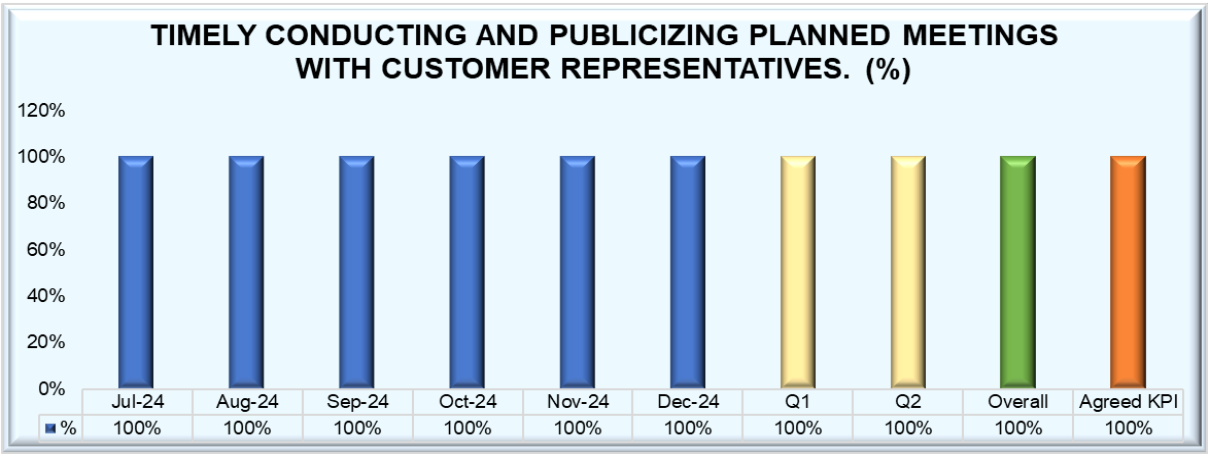


Figure 44: Timely Response to Customers' Written Complaints – TANESCO

15. INVESTMENT IN ELECTRICITY INFRASTRUCTURE

The investment in the electricity supply industry continued to grow. This is observed with the growth in investment by the public sector in the generation, transmission and distribution segment. As well as the private sector, particularly in electricity generation.

15.1 Public Sector Developed Infrastructure

The public sector investments include the generation and transmission infrastructures.

15.1.1 Electricity Generation Infrastructure

The four strategic projects with an installed capacity of 2,235.5MW were under construction as in **Figure 45**.

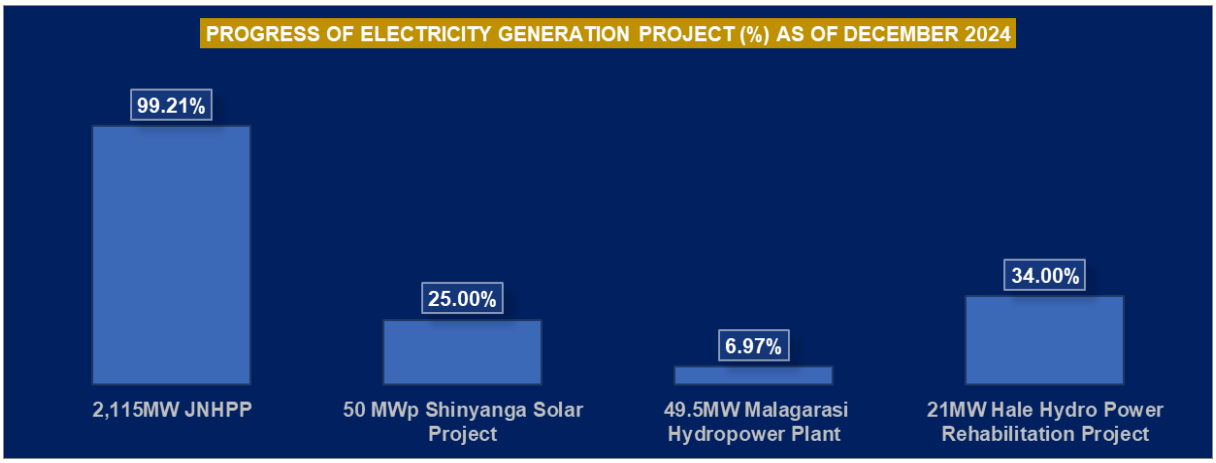


Figure 45: Progress of Electricity Generation Projects (%)

15.1.2 Electricity Transmission Line

Thirteen (13) strategic projects with a route length of 2,264km are in **Figure 46**.

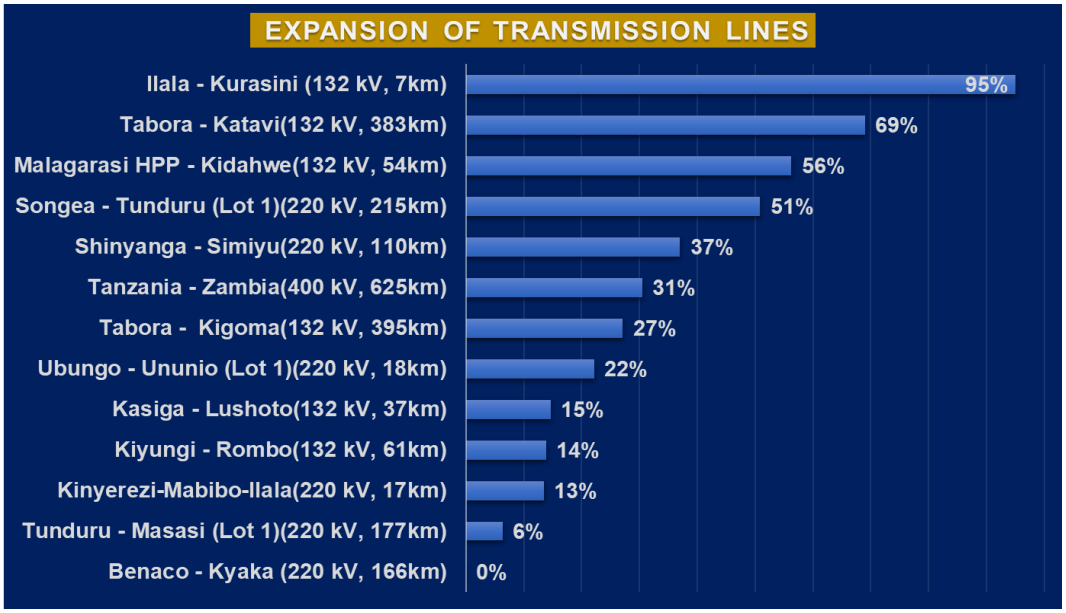


Figure 46: Progress of Electricity Transmission Line Projects (%)

15.1.3 Electricity Grid Substation

The 39 projects are under construction with about 3,801MVA as depicted in **Figure 46**.

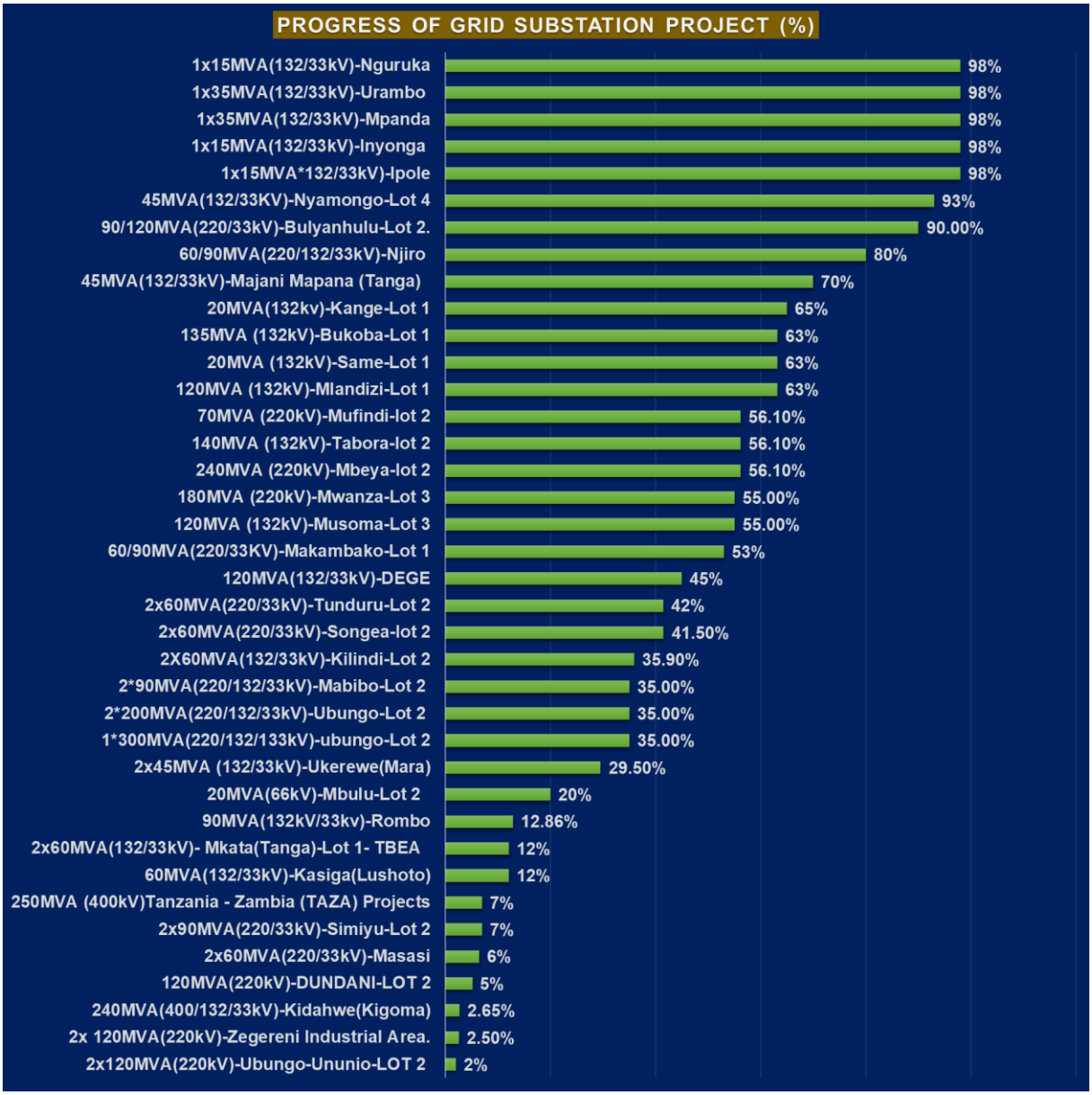


Figure 47: Progress of Grid Substation Projects (%)

15.2 Private Sector Developed Infrastructure

Private entities with Power Purchase Agreements (PPAs) with TANESCO are developing 39 electricity generation projects with a combined capacity of 196.7MW as in **Figure 48**.

Figure 48: Private Entities Developing Electricity Generation Power Plant

16. REVENUE COLLECTION EFFICIENCY

The average revenue collection efficiency was 99%, as depicted in **Figure 49**.

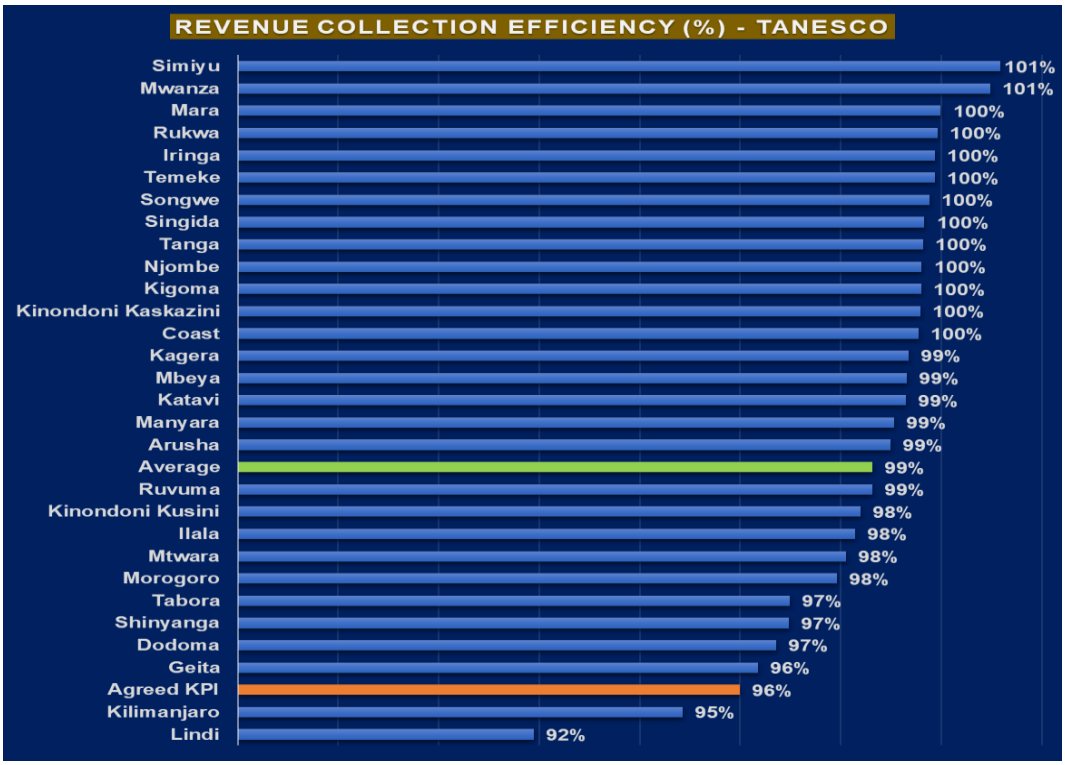


Figure 49: Revenue Collection Efficiency – TANESCO

17. MARKET COMPETITION ANALYSIS

The electricity supply industry is mainly dominated by TANESCO, a public utility undertaking electricity generation, transmission, distribution, supply, and cross-border trade. Private entities are key participants in electricity generation and distribution.

17.1 Market Share – Installed Capacity

TANESCO accounts for 85% of the electricity generation power plants as depicted in **Figure 50**.

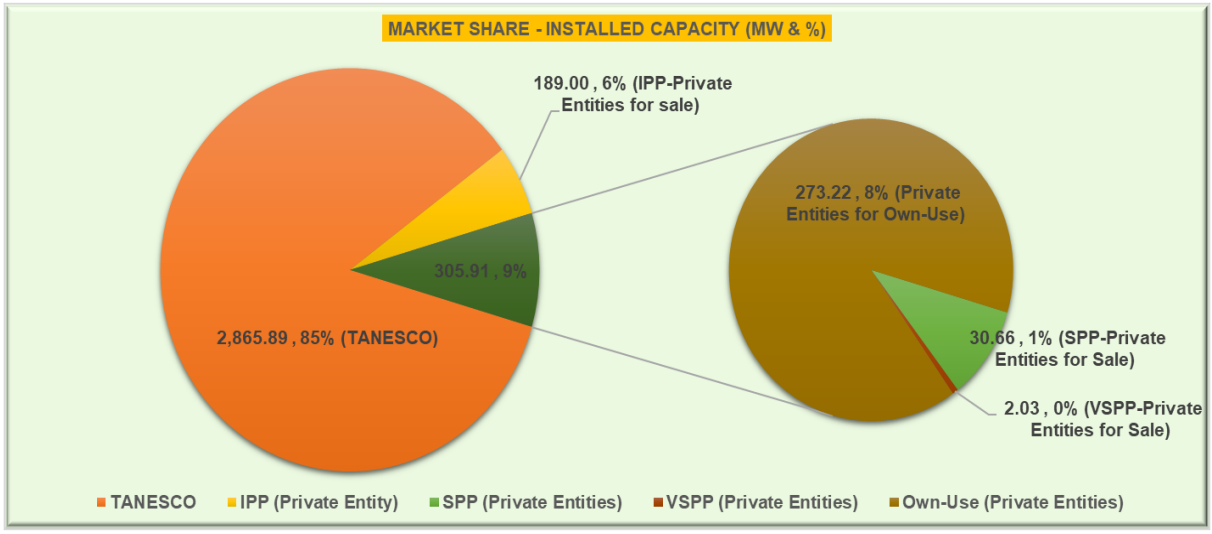


Figure 50: Market Share – Installed Capacity (MW)

17.2 Market Share – Electricity Generation

TANESCO accounts for 92% of electricity generation as depicted in **Figure 51**.

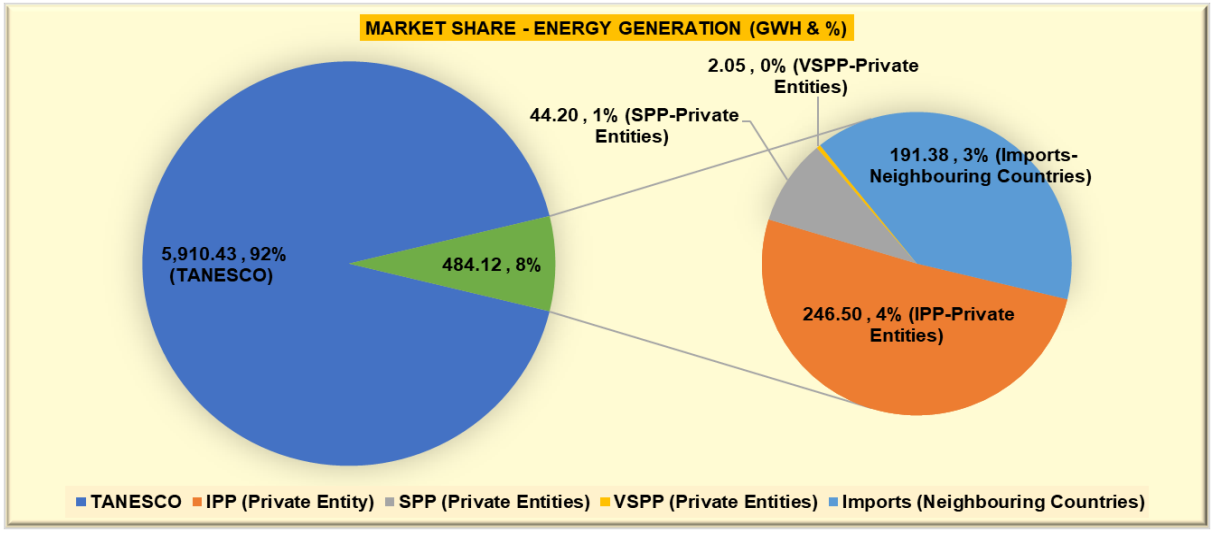


Figure 51: Market Share – Electricity Generation

17.3 Market Share - Electricity Transmission

TANESCO accounts for 100% ownership of transmission infrastructures at voltage levels depicted in **Figure 52**.

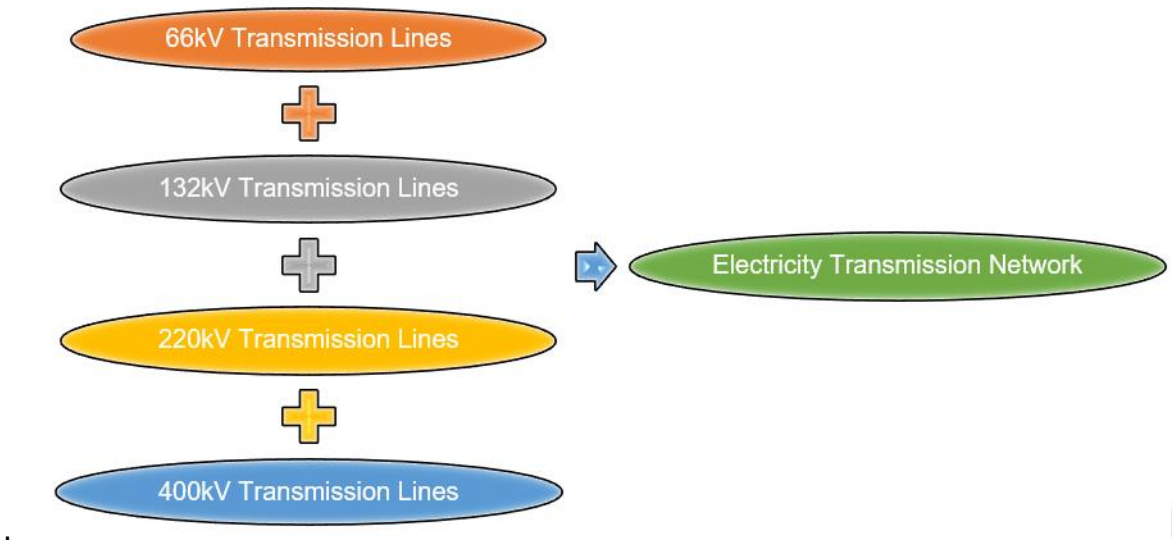


Figure 52: Market Share in The Electricity Transmission Voltage Levels – TANESCO

17.4 Electricity Distribution Market Share

TANESCO accounts for 99.50% of the customers supplied with electricity as depicted in **Figure 53**. Likewise, it accounts for 99.47% of the infrastructure as depicted in **Figure 54**.

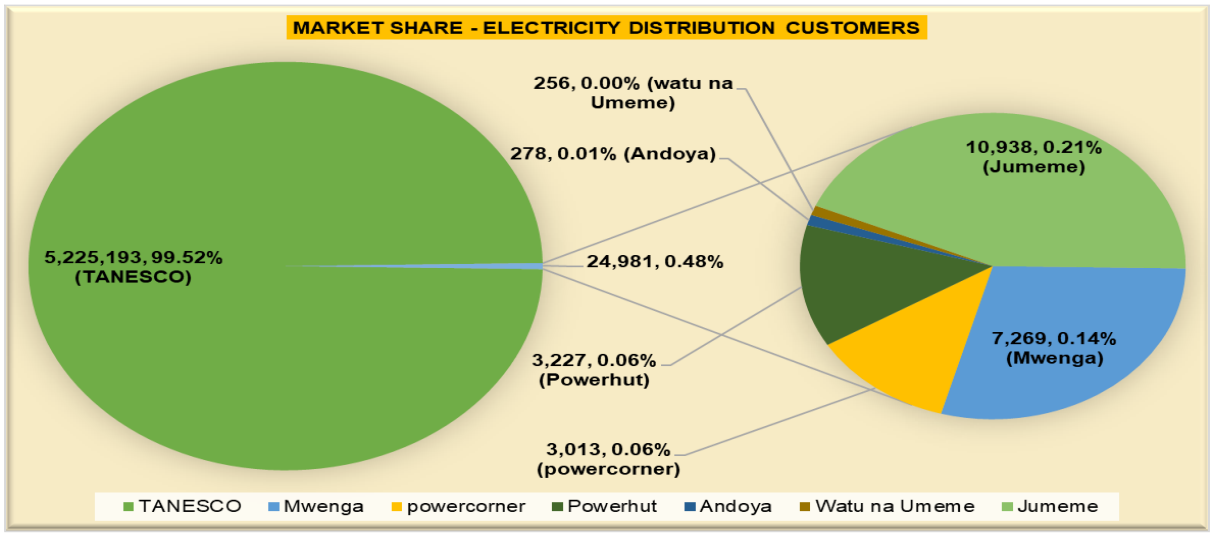


Figure 53: Market Shar – Electricity Distribution Customer

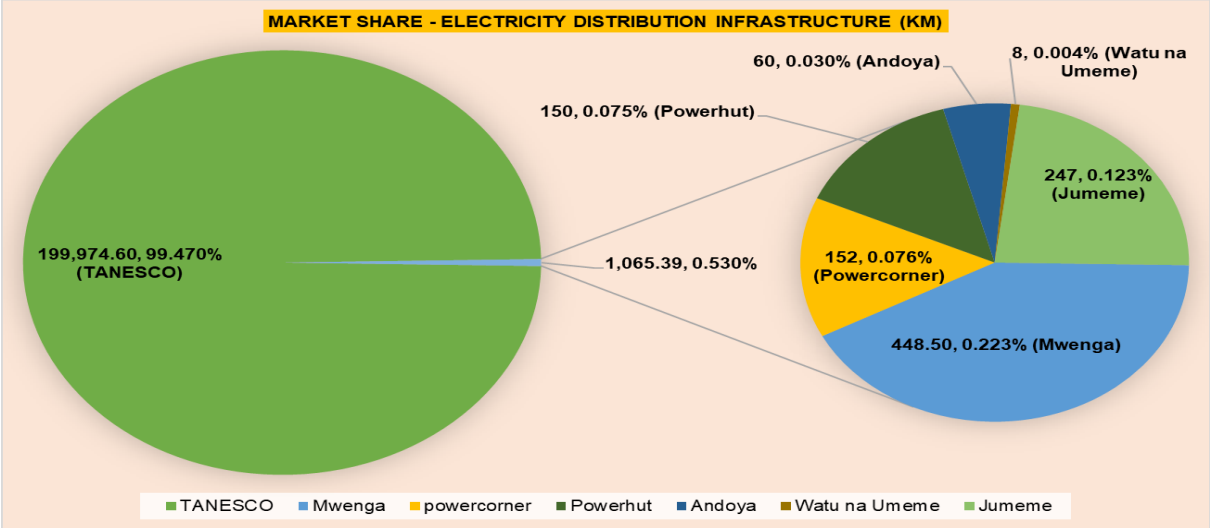


Figure 54: Market Share – Electricity Distribution Route Length (km)

18. REGULATORY IMPACT

The quality of the regulatory environment and the delivery of regulatory outcomes are strongly dependent on the quality of the regulatory design processes. Thus, regulatory impact includes promoting the affordability, security, Quality, and Reliability of Electricity Supply Services, Investments, Sustainability of Regulated Entities, Electrification, and customer services.

18.1 Affordability of electricity services

9,754 personnel had electrical installation activity licences, hence promoting affordability and customer service through competition. Furthermore, it increased the safety of people and their property. Likewise, approved tariffs for selling electricity to end-user customers and to the grid ensured the affordability of electricity services to customers and the efficient operation of regulated entities.

18.2 Security Of Electricity Supply

11 entities with a combined installed capacity of 3,087.58MW had licenses to generate and sell electricity, thus ensuring the security of the electricity supply. Likewise, 60 Power Purchase Agreements (PPAs) with a combined installed capacity of 457.125MW had approvals for private entities to generate, sell, import, or export electricity within and outside the country, thus ensuring the security of the electricity supply.

18.3 Quality and Reliability of Electricity Supply Services

Performance Agreements were signed with regulated entities, establishing key performance indicators (KPIs). Likewise, regulated entities were monitored, and their performance was measured to ensure efficient operation and compliance with agreed

KPIs. As a result, SAIFI was 3.89 incidence for transmission infrastructures and within an agreed Target of <10 and 11 for distribution and supply infrastructure and within a KPI of <26.

18.4 Investments

Four (4) public sector developed electricity generation projects with a combined capacity of 2,235.5MW and 39 private sector developed projects with a combined capacity of 179.59MW were under construction. Likewise, 13 transmission line projects with a route length of 2,264km and 39 grid substations with a combined capacity of 3,801MVA were under construction by the public sector.

18.5 Sustainability of Regulated Entities

The approved tariffs for regulated entities to sell to end-use customers and the grid ensure sustainability. Likewise, regulated entities were monitored and measured in compliance with tariff orders and performance agreements, among others, to ensure efficient and effective operation, thus promoting their sustainability. As a result, revenue collection efficiency was 99%.

18.6 Electrification

Compliance monitoring on the performance of regulated entities was going on in line with the performance agreement and relevant legislation to ensure the timely connection of customers to the power supply. As a result, 5,225,193 customers were connected, an increase of 267,915 from 4,957,278 in June 2024.

18.7 Consumer Safeguard

The regulated entities were monitored to ensure compliance with legislation to promote customer service. As a result, 98% of customer calls for Temporary breakdown was attended on time, 94% of quotations for customer applications for power connection was issued on time, 97% of customer service line construction was done on time, 100% of customers written complaints were replied on time, 100% of notifications for power interruptions were issued on time, and 100% of planned meeting with customer representative and published and conducted on time.

19. FUTURE OUTLOOK OF THE ELECTRICITY SUPPLY INDUSTRY

The future outlook of the electricity industry is encouraging. The following are some anticipated future outlooks of the sub-sector.

19.1 Net-Metering Framework

The framework that allows utilities and customers to engage in net-metering is in place to promote the security of the electricity supply, clean energy, clean cooking, and the efficient use of electricity in line with the Electricity (Net-Metering) Rules, 2018. The same will be promoted where customers will engage in a net energy

metering billing mechanism with the utilities to earn credit for excess energy production through renewable sources such as solar to offset the grid energy consumed as in **Figure 55**. The framework allows net-metering energy supply up to 5% of the maximum demand.

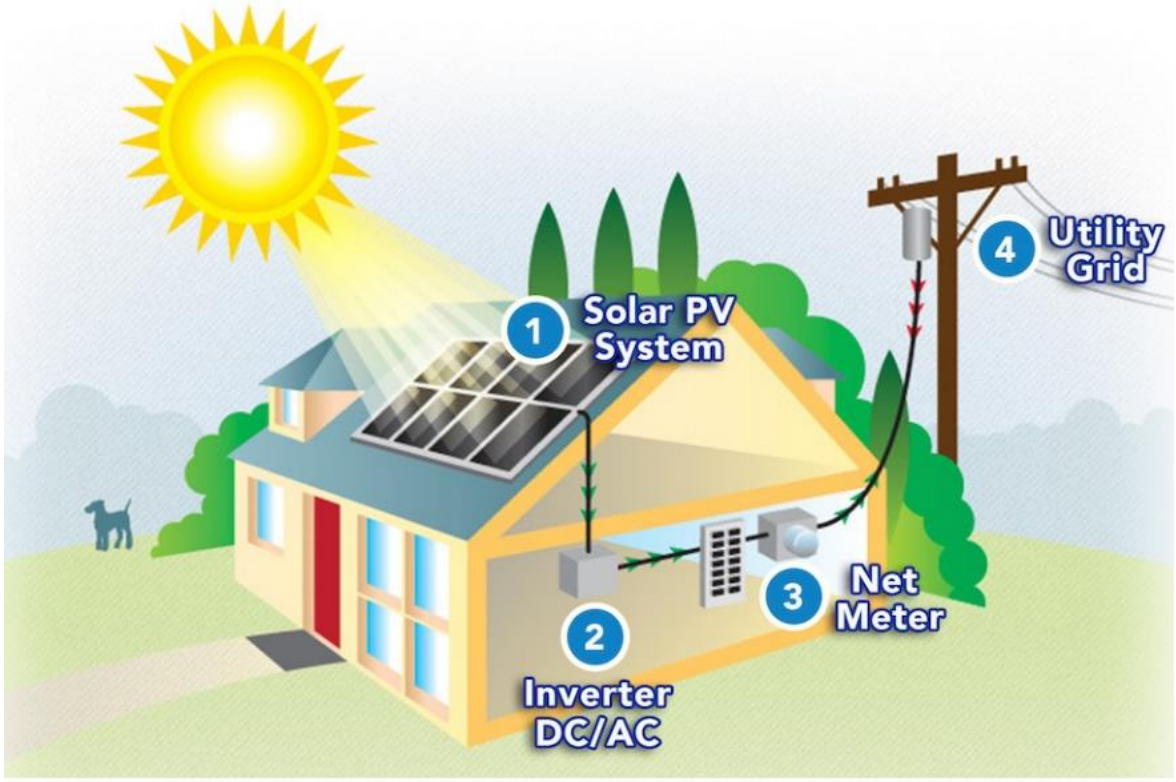


Figure 55: Net-Metering Mechanism

19.2 Private Sector Financing the Construction of Electric Supply Line

The framework allowing the private sector to finance the construction of electric supply lines is in place to promote electrification accessibility, connectivity, and clean cooking in line with Regulation 4 of the Electricity (General) Regulations, 2020. The same will be promoted, where customers will be reimbursed by engaging with the utilities in financing the electricity supply line construction. The framework includes transmission, distribution and supply infrastructure up to the customers as depicted in **Figure 56**.

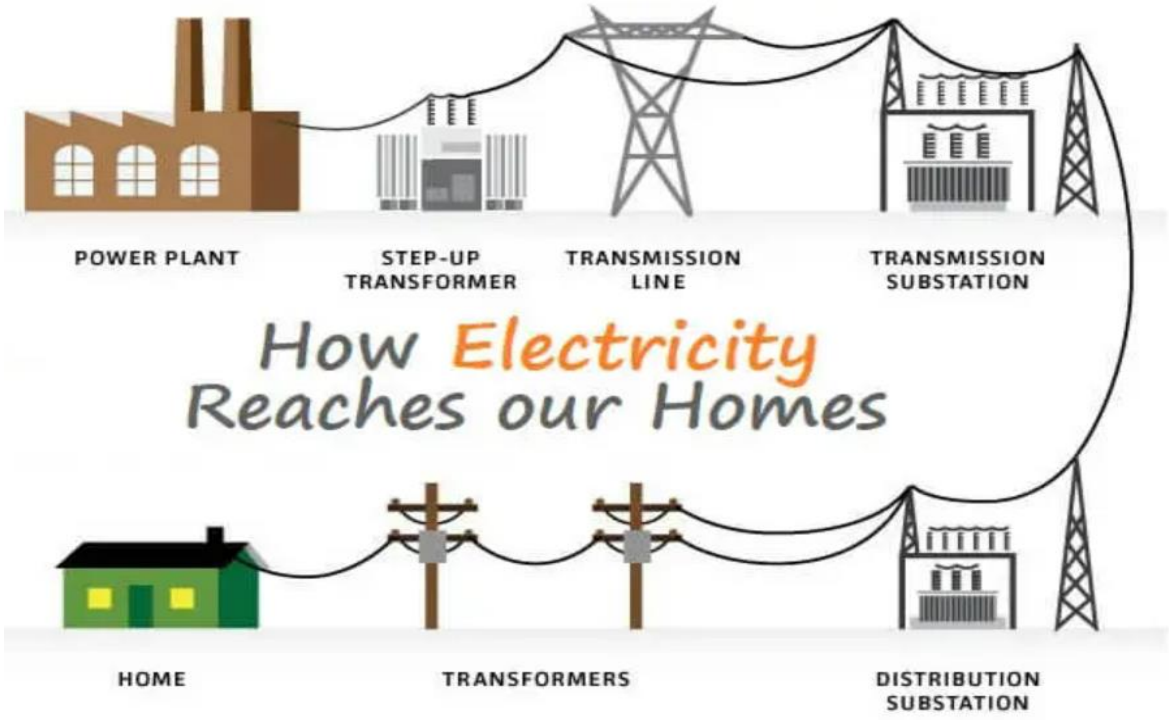


Figure 56: Private Sector Financing the Construction of Electric Supply Line

19.3 Electro Mobility

The development of the framework for regulation of the electromobility power consumption and charging stations are in the process to promote electromobility through efficient use of electricity and safety as depicted in **Figure 57**. This is based on the fact that the increase in the adoption of electromobility will increase electricity consumption demand and safety requirements.

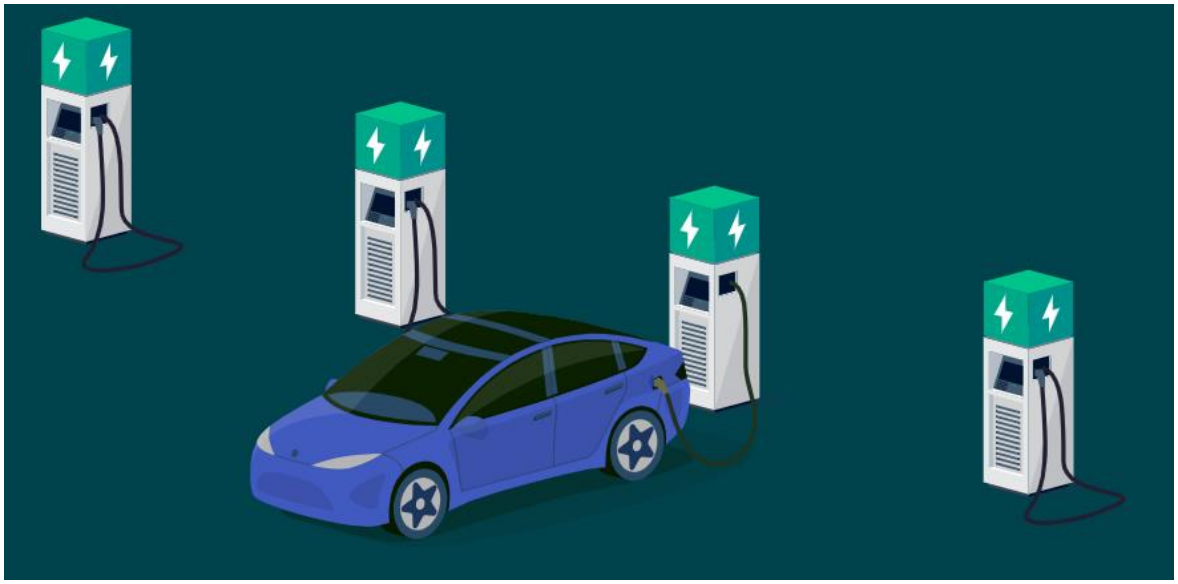


Figure 57: Electromobility

19.4 Generation Mix

Based on the Power System Master Plan 2020, the generation plan and its respective generation mix are depicted in **Figure 58**. The plan enhances the involvement of both private and public investments.

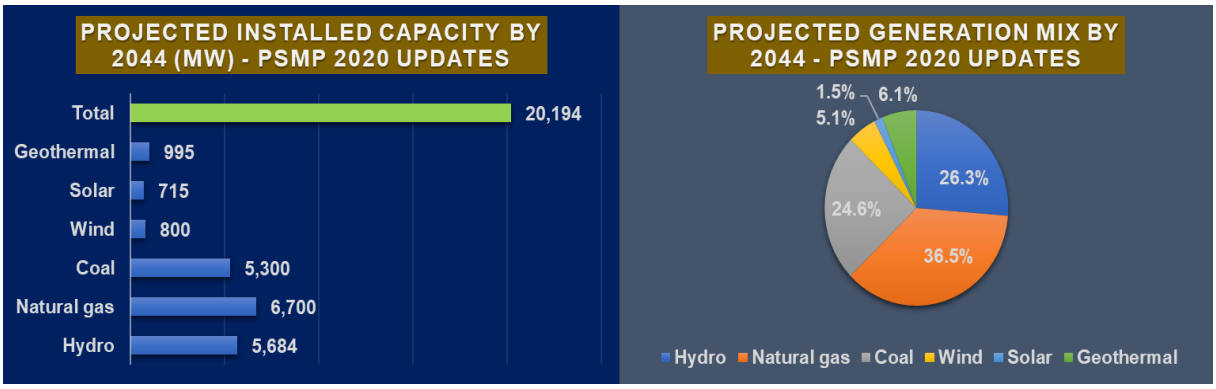


Figure 58: Projected Generation Plan By 2044 – PSMP 2020 Updates

19.5 Generation Forecast

The PSMP 2020 forecasts a growth in energy generation to serve the forecasted demand growth and abundant available resources as depicted in **Figure 59**.

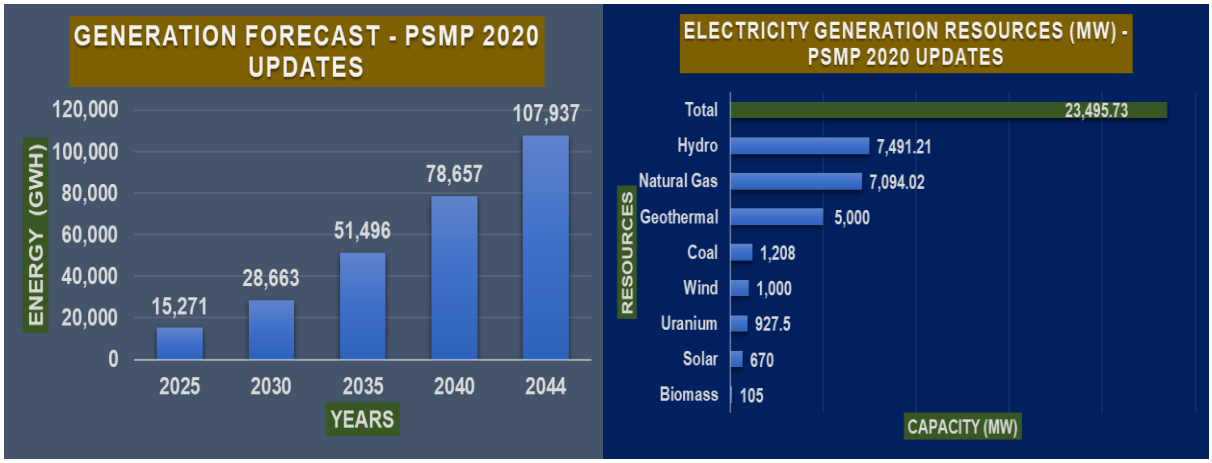


Figure 59: Generation Forecast and Available Resource – PSMP 2020 Updates

19.6 Electrification and Power Demand Forecast

The PSMP 2020 Updates forecast a demand growth of up to 17,611 MW and electricity connectivity of up to 96.1% in 2044, as depicted in **Figure 60**.

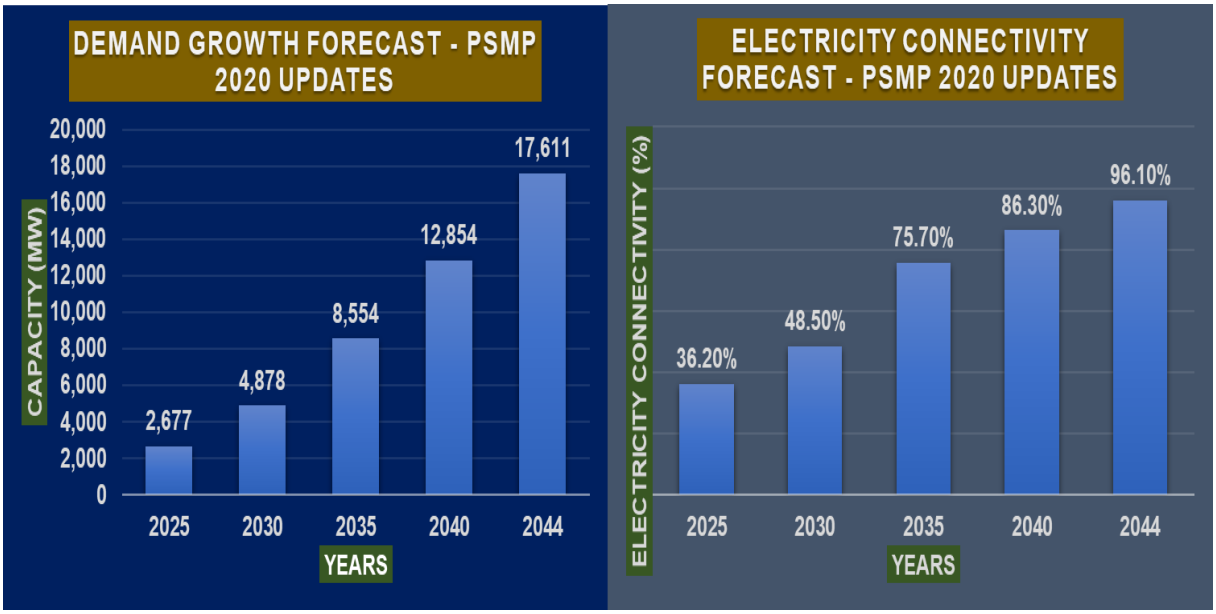


Figure 60: Electricity Demand and Connectivity Forecast – PSMP 2020 Updates

19.7 System Losses

The trend indicates that the system losses for FY 2023/24 were 14.61%, an increase of 0.04% from 14.57% in the previous year. To reduce the energy losses, the utility is undertaking several initiatives, including the construction of new and the rehabilitation of the existing transmission and distribution infrastructure, as well as conducting operational campaigns against energy theft. In the future, the system losses are expected to be 12.3% by 2025 to 12% by 2026 as per PSMP 2020, provided that investments are carried out as planned.

19.8 Energy Efficiency and Demand Side Management

To ensure the security of power supply to meet the demand in the sector based on the current growth and the need to preserve the environment, there should be a conducive setting that attracts public and private capital investments in energy efficiency and demand side management. Furthermore, such a conducive setting and incentives should encourage customers to participate in the energy efficiency and demand-side management frameworks. In collaboration with the government, EWURA will continue to create awareness, promote investments, and put in place conducive regulatory frameworks.

19.9 Electricity Market Trend

The country has witnessed several market trends requiring significant amounts of electricity. These include the development of the Liquefied Natural Gas Project, the ongoing adoption of electric mobility technology, the introduction of electric trains following the commencement of construction of the Standard Gauge Railway project (SGR), and country commitments to modern cooking technology, including electricity

cooking (e-cooking) to reduce carbon emissions. Thus, EWURA, under the guidance of the government and in collaboration with other stakeholders, will continue to develop the regulatory framework for enhancing the smooth adoption of emerging issues in the electricity supply industry.

20. ACHIEVEMENTS AND CHALLENGES

The electricity supply industry observed some significant achievements. Likewise, it faced some challenges, which were mitigated accordingly.

20.1 Achievements

During the period under review, the positive regulatory environment in the country has led to achievements in the electricity sub-sector that include the following: -

a) 36 electricity generation licenses exist with a combined installed capacity of 3,396.80MW from 28 licenses in June 2024.

b) 9,754 electrical installation licenses exist to enhance electrical installations, particularly in rural areas, from 9026 to June 2024.

c) 60 power purchase agreements exist with a combined capacity of 457.125MW from 59 PPA in June 2024.

d) Seven (7) tariff orders exist for entities/utilities selling electricity to customers. Likewise, the feed-in tariff exists for entities selling electricity in bulk to the main grid and off-grid.

e) 45 complaints and disputes between regulated entities and respective customers were resolved.

f) Installed capacity reached 3,360.80MW from 2,411.33MW in June 2024.

g) Electricity demand reached 2,174.24MW (including own-use and off-grid demand) from 1,654.2MW (excluding own-use and off-grid demand).

h) The transmission line route length reached 7,809.67km from 7,524km in June 2024.

i) The distribution line route length reached 199,974.6km from 188,266.23 km in June 2024.

j) Connected Customers reached 5,225,193 from 4,982,259 in June 2024.

k) System Average Interruption Frequency Index (SAIFI) in the electricity transmission network was 3.89 incidences and within the target of below 10 incidences.

l) The System Average Interruption Duration Index (SAIDI) in the electricity transmission network was 2.83 hours, with the target of below 6.5 hours.

m) System Average Interruption Frequency Index (SAIFI) in the electricity supply network was 11 incidences and within the target of below 26 incidences.

n) The System Average Interruption Duration Index (SAIDI) in the electricity supply network was 1,129 hours, with the target of below 1,536 hours.

o) Four electricity generation projects with an installed capacity of 2,235.5MW were under construction by the public sector.

p) Thirteen (13) electricity transmission line projects with a route length of 2,264km were under construction by the public sector.

q) 39 electricity substation projects with about 3,801MVA were under construction.

r) The revenue collection efficiency reached 99% and went above the target of 96%.

20.2 Challenges

During the period under review, the sub-sector faced some challenges, which were mitigated accordingly. These include an increase in electricity demand as well as Inadequate private sector investments in the electricity supply industry to meet the projected plans. The government will continue improving the investment environment to incentivise more investors in the electricity supply industry.

21. CONCLUSION

Generally, there is no doubt that electricity demand is growing due to social and economic development. To manage the demand, there is a need for more investment. In this regard, the government and other key stakeholders will continue to regulate and promote more investments in the electricity supply industry to meet the growing demand.