UNITED REPUBLIC OF TANZANIA MINISTRY OF ENERGY



ENERGY AND WATER UTILITIES

**REGULATORY AUTHORITY** 

(EWURA)



THE ELECTRICITY SUB-SECTOR REGULATORY PERFORMANCE UPDATES – MARCH 2025

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# ABBREVIATIONS AND ACRONYMS

CAIDI : Cap. : COD :	Customer Average Interruption Duration Index Chapter Commercial Operation Date
ESI :	
EWURA :	Energy and water Utilities Regulatory Authority
GO :	
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 1<sup>st</sup> July 2024 to 31<sup>st</sup> March 2025. 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 4,300.80 MW from 28 licenses in June 2024. Also, 10,077 electrical installation licenses exist to enhance electrical installations, particularly in rural areas, from 9026 in June 2024.

Sixty (63) power purchase agreements existed with a combined capacity of 457.125 MW from 59 PPAs 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 4,300.80 MW from 2,411.33 MW in June 2024. Electricity demand reached 2,263.44MW (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 5,372,773 from 4,982,259 in June 2024. Also, forty (40) complaints and disputes between regulated entities and respective customers were resolved. Furthermore, the revenue collection efficiency reached 97% and went above the target of 96%.

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

The System Average Interruption Frequency Index (SAIFI) in the electricity supply network was 15 incidents, and within the target of below 26 incidents. Also, the System Average Interruption Duration Index (SAIDI) in the electricity supply network was 1,129 hours, with a target of below 1,536 hours.

Four electricity generation projects with an installed capacity of 2,235.5 MW 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 3,801 MVA were under construction. Furthermore, we are developing 44 electricity generation projects with a combined capacity of 204.6MW.

During the year under review, the electricity supply industry experienced several challenges, including an increase in electricity demand due to socioeconomic 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 March 2025, particularly in generation, transmission, distribution, supply, and crossborder 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 **Figure 1**.



Figure 1: The Electricity Supply Industry Institutional Structure

### 3. **REGULATORY TOOLS**

The regulatory tools used to administer the electricity supply industry are presented in **Figure 2**. Also accessible at <u>https://www.ewura.go.tz/electricity-regulatory-tools/</u>.



Figure 2: Regulatory Tools in The Electricity Supply Industry

# 4. LICENSING

A total of 10,116 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 3,829MW 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 235.31 MW, as depicted in **Figure 5**.

PRIVATE ENTITI	ES LICENCED	TO GENERATE	ELECTRICITY	FOR SALE (M	W)
Total					235.31
Songas				18	9.00
TPC Ltd	20.00				
Tulila Hydro Electric Plant Co. Ltd	7.50				
NextGen Solawazi Ltd.	5.00				
Mwenga Hydro Ltd	3.36				
Tanganyika Wattle Company Ltd	2.75				
Mwenga Hydro Limited	2.40				
Madope Hydro Company Ltd.	1.84				
Ngombeni Power Limited	1.40				
Luponde Hydro Limited	1.06				
Andoya Hydro Electric Power Co. Ltd	1.00				

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 own 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 6,408 kW are registered to generate electricity, with operations spread across 126 sites, each generating less than one megawatt, as indicated in **Figure 7**.

CAPACITY OF REGISTRED ENTITIES (kW)		NUMBER OF SITES OF REGISTREDD ENTITIES		
TOTAL	6,408			
JUMEME	1,206	TOTAL	126	
ΥΟΥΙ	995	JUMEME	45	
DOMERHUT	079	POWERHUT	40	
POWERHUT	878	POWERCORNER	24	
NASRA ESTATES CO. LIMITED	800	E.ON OFF GRID SOLUTION GMBH	6	
MADOPE	700	MATEMBWE	1	
MATEMBWE	433			
DARAKUTA	420			
TEMBO NICKEL CORPORATION	335	MADOPE		
		KILIFLORA	1	
KILIFLORA	230	RUAHA ENERGY	2	
POWERCORNER	206	NASRA ESTATES CO. LIMITED		
RUAHA	128	WATU NA UMEME	2	
WATU NA UMEME	48	ΥΟΥΙ		
E.ON OFF GRID SOLUTION GMBH	29	DARAKUTA		

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 (PPAs) existed with a combined capacity of 456MW, as depicted in **Figure 9**. The operating PPAs are in **Figure 10**. The PPA, whose power plants are at different stages of construction, are in **Figure 11**.







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 is in **Figure 12**. Also, categories of indicates tariff to generate (100kW—10MW) electricity and sell to the grid is depicted in **Figure 13**. Details are accessible at <u>https://www.ewura.go.tz/wp-content/uploads/2019/07/The-Electricity-Standardized-</u> <u>Small-Power-Projects-Tariff-Order-2019-GN-No.-464.pdf</u>.



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 40 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 4,300.80MW as in Table 1.

Description Entity 0		Capacity (MW)	Percentage (%)	% Share
	TANESCO	3,776.95	94.68%	
Main Grid for	IPP (SONGAS)	189	4.74%	02 76%
Sale	SPP owned by private entities	23.26	0.58%	92.70%
	Total	3,989.21	100.00%	
	TANESCO	28.942	75.42%	
Off Grid for Sala	SPP owned by private entities	7.4	19.28%	0.000/
On Grid for Sale	VSPP owned by private entities 2.03 5.29%		5.29%	0.89%
	Total	38.372	100.00%	
0)///2-115.0	Private Entities	273.22		
Own-use	Total	273.22		6.35%
	TANESCO	3,805.89	94.50%	
	IPP (SONGAS)	189	4.69%	
Total	SPP (all private entities)	30.66	0.76%	100.00%
TOLAT	VSPP (all private entities)	2.03	0.05%	100.00%
	own-use (Private Entities)	273.22	6.78%	
	Total	4,300.80	106.78%	

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

### Source: EWURA & TANESCO

#### **10.2 Electricity Demand**

The Electricity demand reached 2,263.44 MW in November 2024, as in Figure 15.



Figure 15: Electricity Demand

#### 10.3 Reserve Margin

The reserve margin was 41% of the installed capacity, as depicted in **Figure 16**. It is equivalent to 1,303MW.



#### 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 66.9%.



Figure 17: Energy Generation Mix (%)

### 10.5 Availability of Power Plants

The overall Power plant availability was 80.79%, as depicted in Figure 18.



Figure 18: Power Plant Availability (%)

#### **10.6 Power Plant Utilization**

The average power plant utilization was 36.34% 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 infrastructure and investments in the transmission line and substations, among others.

#### 11.1 Electricity Transmission Infrastructure

TANESCO owns and operates a transmission route length of 78,09.67, as depicted in **Figure 20**.



Figure 20: Transmission Line Route Length



Figure 21: Transmission Line Route Length – 400kV

TRANSMISSION	LINE ROUTE LENGTH (KM) - 220kV	
Total		3.860.95
220kv-SGR Moro-Dodoma	415.00	
220kv-SGR Dar - Moro	159.00	
220kV-Nyakanazi-Rusumo	94.10	
220kV-Geita-Nyakanazi	143.16	
220kV-Bulyanhuru-Geita	55.00	
220kV Shinyanga-Buzwagi	108.00	
220kV Lemugur-Njiro	16.00	
220kV Babati-Lemugur	<b>146.00</b>	
220kV Singida-Babati	150.00	
220kV Madaba-Songea	<b>140.00</b>	
220kV Makambako-Mbeya	<b>181.10</b>	
220kV Makabako-Madaba	<b>110.00</b>	
220kV Mufindi-Makambako	38.90	
220kV Shinyanga-Bulyanhulu	129.46	
220kV Shinyanga-Mwanza	<b>140.00</b>	
220kV Singida/Shinyanga old	200.00	
220kV Dodoma-Singida old	210.00	
220kV Mtera-Dodoma	<b>130.00</b>	
220kV Iringa-Mtera	<b>107.00</b>	
220kV Iringa-Mufindi	<b>130.00</b>	
220kV Kihansi-Iringa	95.23	
220kV Ifakara-Kihansi	64.00	
220kV Kidatu-Ifakara	<b>116.00</b>	
220kV Kidatu-Iringa	<b>160.00</b>	
220kV Morogoro-Kidatu 2	<b>130.00</b>	
220kV Morogoro-Kidatu 1	<b>128.00</b>	
220kV Morogoro-New Chalinze 2	89.00	
220kV Morogoro-New Chalinze 1	89.00	
220kV Kinyerezi-New Chalinze	95.00	
220kV Luguruni-New Chalinze	62.00	
220kV Ubungo-Kinyerezi	15.00	
220kV Ubungo-Luguruni	15.00	

Figure 22: Transmission Line Route Length – 220kV

TRANSMISSION LINE F	ROUTE LENGTH (KM) - 132kV
Total	1,843.97
132kV-Mtukula-Kvaka	30.00
132kV Mtwara-Mahumbika	80.00
132kV Hale-Kivungi	275.00
132kV Kyaka-Bukoba	54.00
132kV Hale-NPF	13.50
132kV Pangani-Tanga	63.50
132kV Hale-Rhino	60.00
132kV Rhino-Tanga	8.50
132kV-Dege-Kurasini	22.00
132kV-Mbagala-Dege	28.00
132kV Kipawa-Mbagala	7.40
132kV Ubungo-Kipawa	11.00
132kV Gongo la Mboto-Kinyerezi	3.00
132kV Makumbusho-NCC	6.67
132kV Kia-Njiro 2ND	35.00
132kV Kia-Njiro 1ST	<b>36.60</b>
132kV Kiyungi-Kia 2ND	35.00
132kV Kiyungi-Kia 1ST	35.00
132kV Shinyanga-Tabora	203.00
132kV Musoma-Nyamongo	90.00
132kV Mwanza-Musoma	210.00
132kV Kunduchi-Zanzibar 2	63.60
132kV Kunduchi-Zanzibar 1	64.00
132kV Ubungo-Makumbusho	7.00
132kV Ubungo-Kunduchi 2ND	12.00
132kV Ubungo-Kunduchi 1ST	12.00
132kV Ubungo-Ilala 2ND	9.50
132kV Ubungo-Ilala 1ST	9.50
132kV Ilala-Kurasini	7.10
132kV Jangwani-NCC(UNDERGROUND)	1.80
132kV Ilala-Jangwani(OHL)	
132KV Chalinze-Hale	175.00
132KV Morogoro-Chalinze	82.00
132KV New Chalinze/Old Chalinze	5.00
132kv Obungo-New Chalinze	87.00







#### **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 Connection Point (SAIFI-TCP) was 5.26 incidents, and the System Average Interruption Duration Index at Connection Point (SAIDI-TCP) was 3.70 hours, as depicted in **Figure 26**.

SYSTEM AVERAGE INTERRUPTION FREQUENCY INDEX AT TRANSMISSION CONNECTION POINT (SAIFI-TCP)	SYSTEM AVERAGE INTERRUPTION DURATION INDEX AT TRANSMISSION CONNECTION POINT (SAIDI-TCP)
	Annual larget < 6.50
Annual Target <10.00	Total (Q1+Q2+Q3) 3.70
Total (Q1,Q2 & Q3) 5.26	Total - Q3 0.87
Total - Q3 1.37	Total - Q2 0.70
Total - Q2 1.22	Total - Q1 2.13
Total - Q1 2.67	Mar-25 📕 0.16
Mar-25 🗖 0.44	Feb-25 0.17
Feb-25 0.32	Jan-25 0.54
Jan-25 🔲 0.61	Dec-24 🔲 0.35
Dec-24 0.41	Nov-24 0.19
NOV-24 0.43	Oct-24 0.15
Oct-24 0.39 Son 24 0.07	Sep-24 0.11
Sep-24 0.27	Aug-24 1 12
Aug-24 0.74	
NUMBER	HOURS

Figure 26: Reliability of Electricity Transmission Infrastructure

#### 11.4 Unserved Energy

The unserved energy was 1.2% of the energy generated, equivalent to 85.57 GWh, as depicted in **Figure 27**.

UNSERVED ENERGY (%)		UNSERVED ENERGY (GWh)			
Agreed KPI Average (Q1+Q2+Q3) Average (Q3) Average (Q2) Average (Q1) Mar-25 Feb-25 Jan-25 Dec-24 Nov-24 Oct-24 Sep-24 Aug-24 Jul-24	4.53% 0.89% 1.20% 0.68% 0.80% 1.55% 0.88% 1.17% 0.79% 0.63% 0.64% 0.57% 0.84% 0.99%	Total ( Q1+Q2+Q3) Total (Q3) Total (Q2) Total (Q1) Mar-25 Feb-25 Jan-25 Dec-24 Nov-24 Oct-24 Sep-24 Aug-24 Jul-24	22.04 23.71 17.62 9.18 13.03 8.47 6.74 6.83 5.58 8.52 9.61	39.83	85.57

Figure 27: Unserved Energy

### **12. ELECTRICITY DISTRIBUTION**

The electricity distribution segment continues to grow. This is observed in the growth of infrastructure 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 203,241.01km, as depicted in **Figure 30**. The contribution of the length by TANESCO regions is depicted in **Figure 31**.

EXISTING ELECTRICITY DISTRIBUTION LINE ROUTE LENTH (KM)					
	115,206.05	88,034.96		203,241.01	
	0.23/0.3kV	11/33kV		Total	

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



Figure 31: Existing Electricity Distribution Line Route Length – 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 5,372,773 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 15 incidents, as depicted in **Figure 34**.





### 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 146 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 5.86%, equivalent to 542.79 GWh, as depicted in Figure 37.

ELECTRICI	TY TRANSMISSION LOS	SES (%)	ELECT	RICITY TRAN	ISMISSION Vh)	LOSSES
Annual Target		<5.88%				
Average (Q1+Q2+Q3)	5.86%		Total (Q1+Q2+Q3)			542.79
Average (Q3)		5.87%	Total (Q3)		191.91	
Average (Q2)	5.86%		Total (Q2)		178.63	
Average (Q1)	5.85%		Total (Q1)	· ·	172.25	
Mar-25		5.87%	Mar-25	66.18		
Feb-25		5.87%	Feb-25	60.74		
Jan-25		5.87%	Jan-25	64.99		
Dec-24	5.86%		Dec-24	60.10		
Nov-24	5.86%		Nov-24	59.62		
Oct-24	5.86%		Oct-24	58.91		
Sep-24	5.85%		Sep-24	57.74		
Aug-24	5.85%		Aug-24	57.69		
Jul-24	5.85%		Jul-24	56.82		



#### **13.2 Electricity Distribution Losses**

The loss was 8.1%, as depicted in **Figure 38**. It is equivalent to 669.94 GWh, as in **Figure 38**.



Figure 38: Electricity Distribution Losses (%) - TANESCO



Figure 39: Electricity Distribution Losses (MWh) – TANESCO

# 14. CUSTOMER SERVICES

Customer service continues to grow in line with the performance agreements.

#### 14.1 Timely Attending to Customers' Calls for Temporary Breakdowns

99% 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

95% 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

99% 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: Meeting with Customers' Representatives – 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**

**EXPANSION OF TRANSMISSION LINES** Ilala - Kurasini (132 kV, 7km) 100% Tabora - Katavi(132 kV, 383km) 95% Malagarasi HPP - Kidahwe(132 kV, 54km) 94% Tabora - Kigoma(132 kV, 395km) 52% Songea - Tunduru (Lot 1)(220 kV, 215km) 50% Tanzania - Zambia(400 kV, 625km) 40% Shinyanga - Simiyu(220 kV, 110km) 37% Ubungo - Ununio (Lot 1)(220 kV, 18km) 31% Kinyerezi-Mabibo-Ilala(220 kV, 17km) 19% Kasiga - Lushoto(132 kV, 37km) 15% Kiyungi - Rombo(132 kV, 61km) 14% Tunduru - Masasi (Lot 1)(220 kV, 177km) 6% Benaco - Kyaka (220 kV, 166km) 0%

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 47**.



#### PROGRESS OF GRID SUBSTATION PROJECT (%)

Figure 47: Progress of Grid Substation Projects (%)

#### **15.2 Private Sector Developed Infrastructure**

Private entities with Power Purchase Agreements (PPAs) with TANESCO are developing 44 electricity generation projects with a combined capacity of 204.6 MW, as in **Figure 48**.



Figure 48: Private Entities Developing Electricity Generation Power Plant

### **16. REVENUE COLLECTION EFFICIENCY**

The average revenue collection efficiency was 97% as of March 2025, as depicted in **Figure 49**.



Figure 49: Revenue Collection Efficiency – TANESCO

# **17. MARKET COMPETITION ANALYSIS**

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

# 17.1 Market Share – Installed Capacity

TANESCO accounts for 88% 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 99.54% 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 Share – 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

10,077 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**

12 entities with a combined installed capacity of 4,027.58MW 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 456MW 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 5.26 incidence for transmission infrastructures and within an agreed Target of <10 and 15 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 44 private sector developed projects with a combined capacity of 204.6MW 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 97%.

### **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, 5,372,773 customers were connected, an increase of 415,495 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, 99% of customer calls for Temporary breakdown were attended on time, 95% of quotations for customer applications for power connection were issued on time, 99% 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 following 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 up to 17,611 MW and electricity connectivity 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 rehabilitation of the existing transmission and distribution infrastructure, as well as conducting operational campaigns against energy theft. In 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 4,300.80MW from 28 licenses in June 2024.
- b) 10,077 electrical installation licenses exist to enhance electrical installations, particularly in rural areas, from 9026 in June 2024.
- c) 63 power purchase agreements exist with a combined capacity of 465.04MW from 59 PPA in June 2024.
- 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) 40 complaints and disputes between regulated entities and respective customers resolved.
- f) Installed capacity reached 4,300.80 MW from 2,411.33MW in June 2024.
- g) Electricity demand reached 2,263.44 MW (including own-use and off-grid demand) from 1,654.2 MW (excluding own-use and off-grid demand) in 2024.
- h) The transmission line route length reached 7,809.67km from 7,524km in June 2024.
- i) The distribution line route length reached 203,241.01km from 188,266.23 km in June 2024.
- j) Connected Customers reached 5,372,773 from 4,982,259 June 2024.
- k) System Average Interruption Frequency Index (SAIFI) in the electricity transmission network was 5.26 incidences and within the target of below 10 incidences.

- I) The System Average Interruption Duration Index (SAIDI) in the electricity transmission network was 3.7 hours, with the target of below 6.5 hours.
- m) System Average Interruption Frequency Index (SAIFI) in the electricity supply network was 15 incidences and within the target of below 26 incidences.
- n) The System Average Interruption Duration Index (SAIDI) in the electricity supply network was 1,416 hours, with the target of below 1,536 hours.
- o) Four electricity generation projects with an installed capacity of 2,235.5 MW 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 97%.

### 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.