THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF ENERGY

ENERGY AND WATER UTILITIES
REGULATORY AUTHORITY
(EWURA)

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Energy and Water Utilities Regulatory Authority
ISO 9001: 2015 Certified

ELECTRICITY SUB-SECTOR REGULATORY PERFORMANCE REPORT FOR THE FINANCIAL YEAR 2022/23

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CHAIRMAN'S STATEMENT

On behalf of the Board of Directors of the Energy and Water Utilities Regulatory Authority (EWURA), I am pleased to present the Electricity Sub-Sector Regulatory Performance Report for Financial Year 2022/2023. This report has been prepared under the legislation governing the electricity supply industry.

EWURA's strategic objective is to ensure improved quality, availability and affordability of the regulated services, including electricity services. These elements are key ingredients toward realizing the Tanzania Development Vision 2025 and the Sustainable Development Goals. During the period under review, the electricity supply industry registered some success, including: improved service delivery to customers; increased electricity accessibility and connectivity; increased investment in electricity infrastructure; improved licensees' operational and economic efficiency; and improved quality, reliability and affordability of electricity supply industry services.

The Authority commends the Government's commitments to invest in power generation infrastructure, such as the 2,115MW Julius Nyerere Hydropower Project and rural electrification programmes. Equally, the Authority acknowledges the private sector's contribution to government efforts to expand both electricity generation capacity and access to electricity. Together, these measures have played a critical role towards ensuring the availability of adequate, reliable, affordable, sustainable and environmentally friendly supply of electricity to marshal Tanzania's needed socio-economic transformation.

I am also greatly humbled by the continued leadership, support, and cooperation of the Ministry of Energy, Ministry of Water and all other stakeholders. I would like to assure them all that EWURA is committed to delivering its vision of being a world-class regulator for sustainable energy and water services by promoting impartiality, morality, professionalism, accountability, consistency and transparency in our decision-making processes.

Finally, I would like to express my gratitude to the Board of Directors, Management and Staff of EWURA for the team spirit.

Prof. Mark James Mwandosya

Chairman, EWURA Board of Directors

March 2024

FOREWORD

The Electricity Act, Cap 131 and EWURA Act, Cap. 414 mandate EWURA to undertake technical and economic regulatory functions in the electricity supply industry. Section 30(1) of the Electricity Act, Cap 131 requires the Authority to establish systems and procedures to monitor and measure the performance of licensees. In addition, Section 15(4) requires licensees to submit to the Authority, relevant data and information relating to the performance of their functions. Furthermore, Section 30(7) requires EWURA to publish reports on the performance of licensees.

This report presents the performance of regulated activities in the electricity supply industry covering the period of 1st July 2022 to 30th June 2023 under regulatory functions that are implemented by EWURA, including, among others, promoting customer service through the fostering of competition; promoting access to, and affordability of electricity services particularly in rural areas; and promoting least-cost investment and the security of supply for the benefit of customers. It also includes promoting improvements in the operational and economic efficiency of the electricity supply industry and efficiency in the use of electricity; promoting appropriate standards of quality, reliability and affordability of electricity supply; and considering the impact of the industry on the environment.

Achievements made include, among others, an increase in customer connections by 14.52%; power demand by 9.68%; electricity distribution infrastructure investment by 1.81%; and electricity generation infrastructure investment by 9.83%.

The above achievements could not be attained without the continued cooperation from the Government through the Ministry of Energy, the Board of Directors of EWURA, EWURA Management and Staff as well as all stakeholders. I hope that this report will provide the required information to all stakeholders in the electricity supply industry.

Dr. James A. Mwainyekule

Director General

March 2024

ABBREVIATIONS AND ACRONYMS

AHEPO	:	Andoya Hydro Electric Power Limited
CAIDI	:	Customer Average Interruption Duration Index
Cap.	:	Chapter
COD	:	Commercial Operation Date
EMC	:	Electromagnetic Compatibility
ESI	:	Electricity Supply Industry
ESIRSR	:	Electricity Supply Industry Reform Strategy and Roadmap
EWURA	:	Energy and Water Utilities Regulatory Authority
GN	:	Government Notice
GO	:	Gas Oil
GW	:	Giga Watt
GWh	:	Gigawatt-hour
HFO	:	Heavy Fuel Oil
HSE	:	Health, Safety and Environment
IDO	:	Industrial Diesel Oil
IMO	:	Independent Market Operator
IPP	:	Independent Power Producer
ISO	:	Independent System Operator
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
SAIFI	:	System Average Interruption Frequency Index
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 2022 to 30th June 2023. 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 reporting period, as part of its regulatory functions, EWURA issued 1,608 licenses of which, three (3) were for electricity generation and 1,605 for electrical installation personnel.

As of 30th June 2023, the installed capacity for entities generating electricity for sale was 1,911MW, with 1,874.34MW (98.06%) from the main grid and 37.122MW (1.94%) from off-grids. There is a gross increase of 171.03MW (9.83%) from 1,740.43MW in 2021/22. Furthermore, maximum demand was 1,470.50MW recorded on 12th June 2023, increasing by 129.82MW (9.68%) from that of 1,340.68MW recorded on 26th May 2022 in 2021/22. The main grid energy generation mix consisted of natural gas (72.82%), hydropower (26.92%), biomass (0.12%) and heavy fuel oil (0.14%).

TANESCO, being a vertically integrated utility, conducted electricity generation, transmission, distribution, supply, and cross-border trade activities. TANESCO also sells power to Zanzibar. Apart from TANESCO, other eight (8) entities also conducted generation activities; namely Songas Tanzania Limited (189.00MW, natural gas); Mwenga Hydropower Limited (MHL) (4.00MW, hydro and 2.40MW, wind); Tanzania Wattle Company (TANWAT) (1.50MW, biomass); Tanganyika Planting Company Limited (TPC) (9.00MW, bagasse); Andoya Hydro Electric Power Company Limited (AHEPO) (1.00MW, hydro); Madope Company Hydro Limited (1.84MW, hydro); NextGen Solawazi Limited (5.00MW, solar); and Tulila Hydro Electric Plant Company Limited (5.00MW, hydro). In addition, Mwenga Power Services Limited also conducted distribution activities.

During the period, fourteen (14) licensed entities generated electricity for their use; namely Lake Cement Limited (15.40MW, coal); Tanga Cement Public Limited Company (11.48MW, diesel); Kilombero Sugar Company Limited (12.55MW, hydro, bagasse and diesel); Kagera Sugar Limited (27.50MW, bagasse and diesel), Shanta Mine Company Limited (8.20MW, diesel), North Mara Goldmine Limited (18.00MW, Heavy Fuel Oil) and Bulyanhulu Goldmine Limited (39.10MW, heavy fuel oil).

Others are Kilombero Plantations Limited (1.692MW, bagasse, hydro and diesel); Geita Gold Mine Limited, (40.00MW, diesel); Tanzania Cigarette Public Company Limited (3.80MW, natural gas); Stamigold Company Limited (7.00MW, diesel); Dangote Cement Limited (50.00MW, natural gas), ALAF Limited (11.00MW, natural gas), Maweni Limestone Ltd (7.5MW, coal), and Bagamoyo Sugar Ltd (5MW, biomass).

Furthermore, there were three (3) registered entities which generated electricity for sale in bulk to TANESCO; namely Yovi Hydropower Company Limited (0.95MW, hydro); Matembwe Village Company Limited (0.59MW, hydro); and Darakuta Hydropower Development Company Limited (0.32MW, hydro).

In addition, four (4) registered entities were generating and selling electricity to customers from solar photovoltaic through mini-grids ; namely Powercorner Tanzania Limited (310.10kW, twelve (12) sites); Jumeme Rural Power Supply Limited (1,231.00kW, twenty (20) sites); PowerGen Renewable

Energy Limited (438.88kW, twenty (20) sites); and Watu na Umeme Limited (48.00kW, one site); Two (2) registered entities generated electricity for their own use, namely Nasra Estate Company Limited (800.00kW, diesel); and Kiliflora Limited (230.00kW, hydro). Furthermore, Unilever Tea Tanzania Limited continued to be designated as an eligible customer to purchasing power from Mwenga Hydro Limited.

As of 30th June 2023, the transmission network comprised a total of 6,850.19km and 63 grid substations with a total capacity of 6,987 MVA, which indicates an increase of 115MVA as compared to 6,872MVA of the previous year. This is due to commissioning of the new Nyakanazi substation (220kV, 80MVA) and expansion of existing substations namely; Buzwagi (220kV, 30MVA) and Bunda (66kV, 5MVA). The distribution networks owned by licensed entities carrying out electricity activities for sale comprised of 164,361.41km, of which 163,296.06km were for TANESCO, and 448.5km for Mwenga Power Services Limited. There is an increase of 2,929.55km from the previous year when the total length was 161,431.86. In addition, 59.79km was for Andoya, and 557.06km were for other registered entities.

Energy losses for TANESCO amounted to 14.57%, of which 5.88% and 8.69% were for transmission and distribution systems respectively, which indicates a decrease of 0.86% compared to the previous year which had a total loss of 15.43%, of which 6.68% was from transmission and 8.75% from distribution. In the case of Mwenga Power Services Limited, it had a distribution loss of 5.99%, indicating a slight decrease of 0.01% compared to the previous year where it recorded a loss of 6%. Electricity generation projects with a potential capacity of 2,196.700MW, transmission line projects (2,667km), and transmission substations of 530kVA were under construction through TANESCO. Electricity generation projects totalling 100.51MW capacity were under development through private entities.

The Government's investments in rural electrification through REA and TANESCO increased overall electricity access and connectivity. As a result, a total of 4,422,955 customers were connected to electricity, which is an increase of 557,974 customers, equivalent to 14.52% compared to the previous year which stood at 3,847,995 customers.

TANESCO's profit margin ratio was 4%, equivalent to TZS 72.4 billion, while in the previous year the profit margin was 6%, equivalent to TZS 113.9 billion. Songas Tanzania Limited, Mwenga Power Services Limited and Mwenga Hydro Limited recorded negative profit margin. The analysis showed that TANESCO maintained a positive profit margin ratio for three consecutive years. The average unit cost of electricity sold by TANESCO decreased by 6% compared to a decrease of 9% recorded in FY 2021/22. The overall average costs of unit sold reduced from TZS 276/kWh in FY 2021/22 to TZS 258/kWh in FY 2022/23, implying an improvement in operational efficiency.

Challenges faced during the year under review include, among others, low power reliability caused by inadequately maintained infrastructure and a decline in generation plant capacity, particularly hydropower plants, caused by limited hydrology in water catchment areas. To address these challenges, EWURA will continue to collaborate with the Government and other stakeholders to enhance the sustainability of the electricity supply industry. Moreover, EWURA will continue to enforce compliance with regulatory frameworks and increase awareness programmes.

1. INTRODUCTION

Sections 5 and 6 of the Electricity Act, Cap. 131 mandate EWURA to perform technical and economic regulation of the electricity supply industry (ESI) in mainland Tanzania. Electricity plays a vital role in socio-economic development. Availability, affordability, reliability and access to electricity services are key ingredients towards achieving desired socio-economic development in Tanzania.

EWURA's strategic objective is to ensure improved and affordable regulated services including quality, availability and affordability of electricity supply. The Authority's objective is in line with international and national Tanzania development agendas, such as the Third Five-Year National Development Plan 2021/22 - 2025/26, the Sustainable Development Goals (SDGs), and the Tanzania Development Vision 2025, which includes the industrialisation agenda among others.

The strategies for implementation of this objective, among other things, include monitoring and enforcing quality of service standards; promotion of commercial viability of regulated suppliers; development and implementation of measures to protect consumer interests; licensing and registration of regulated suppliers; promotion of modern energy use; ensuring efficient procurement of regulated infrastructure and facilitating investments for sustainable supply of electricity.

EWURA's duties in the electricity sub-sector include protecting consumers' interests through the promotion of competition; promoting access to, and affordability of electricity services particularly in rural areas; promoting least-cost investment and the security of supply for the benefit of consumers; promoting improvement in the operational and economic efficiency of the electricity supply industry and efficient use of electricity; promoting appropriate standards of quality, reliability and affordability of electricity supply; taking into account the effect of the activities of the electricity supply industry on the environment; protecting the public from dangers arising from the activities of the electricity supply industry; and promoting the health and safety of persons employed in the electricity supply industry.

This report presents to stakeholders, the electricity sub-sector's regulatory performance during financial year 2022/2023, particularly in the generation, transmission, distribution, supply and cross-border trade in electricity. The Authority expects that this report will provide useful information and data to stakeholders.

2. REGULATORY TOOLS

Section 40 of the EWURA Act, Cap. 414 and section 45 of the Electricity Act, Cap 131, mandate EWURA to develop rules governing the activities of licensees. During the period under review, EWURA continued to use the existing regulatory tools in regulating the sector as per **Annex 1**. EWURA will continue to develop rules for effective regulation of the electricity supply industry as the need arises.

3. LICENSING AND REGISTRATION

During the period under review, a total of 1,608 licences were issued. Out of these, 1,605 were for electricity installations and three (3) were for electricity generation. There was no application received for registration.

3.1 Power Supply Licensing

Section 5 of the Electricity Act, Cap. 131, mandates EWURA to award licences to entities undertaking or seeking to undertake licensed activities as stipulated under Section 8 of the Act. During the period under review, three (3) generation licences with a potential capacity of 16.5MW were awarded to Suma Hydro Ltd (4MW – hydro, provisional licence for selling electricity to TANESCO), Bagamoyo Sugar Ltd (5MW-biomass, operational licence for own use) and Maweni Limestone Ltd (7.5MW – coal, operational licence for own use) as per **Annex 2.** The number of generation licences issued with their respective installed capacity from 2017/18 to 2021/2022 are depicted in **Figure 1.** Likewise, a list of all actively licenced entities in the electricity supply industry is shown in **Annex 3.**

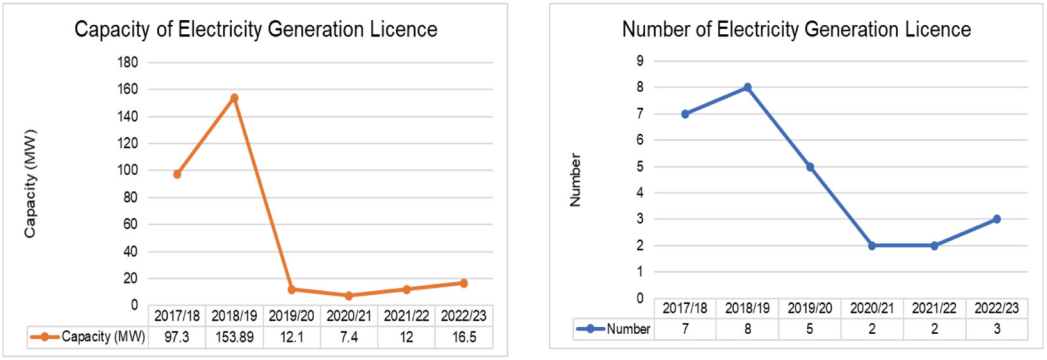


Figure 1: Electricity Generation Licences Issued FY 2017/18 – FY 2021/22

3.2 Power Supply Registration

Section 18 of the Electricity Act, Cap. 131, mandates the Authority to exempt any person from the requirement to have a licence as stipulated in Section 8. Subsequent to this, Rule 37 of the Electricity (Development of Small Power Projects) Rules, 2020, guides the mandatory registration requirements for generation projects below 1MW for commercial operation, and Rule 11(4) of the Electricity (Generation, Transmission and Distribution Activities) Rules, 2019 provides guidance on mandatory registration for generation and distribution services for a person exempted from Section 8 of the Act. However, during the period under review, the Authority did not receive an application for registration. Hence, it continued to monitor the performance of existing registered entities. The trend on the number of registered entities and capacity of electricity generated is as per **Figure 2** and details in **Annex 4.**

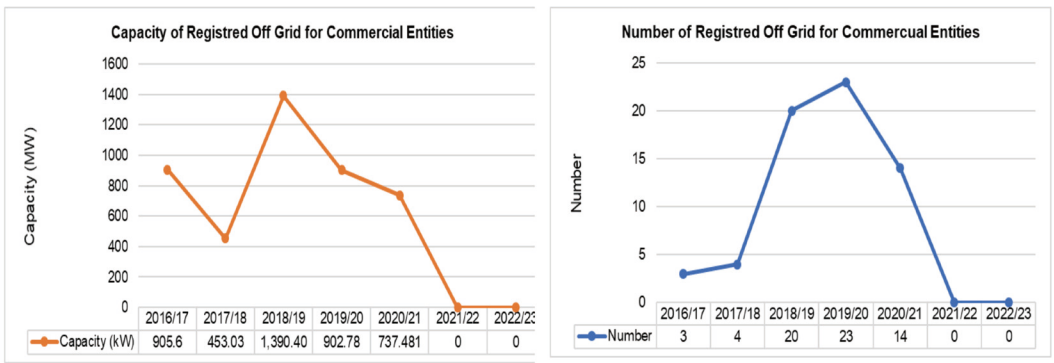


Figure 2: Trend of Registered Off-Grid Commercial Entities and Capacity of electricity generated from 2016/17 – 2022/23

3.3 Electrical Installation Licences

Section 8(2) of the Electricity Act, Cap. 131 requires any person intending to conduct electrical installation activities to apply to the Authority for a licence. In this regard, during FY 2022/23, the Authority awarded 1,605 licences to electrical installations personnel, which is an increase of 498 licences, equivalent to 44.99% from the previous year as per **Figure 3**. The complete list of electrical installation licensees is accessible through the Authority's website "www.ewura.go.tz".

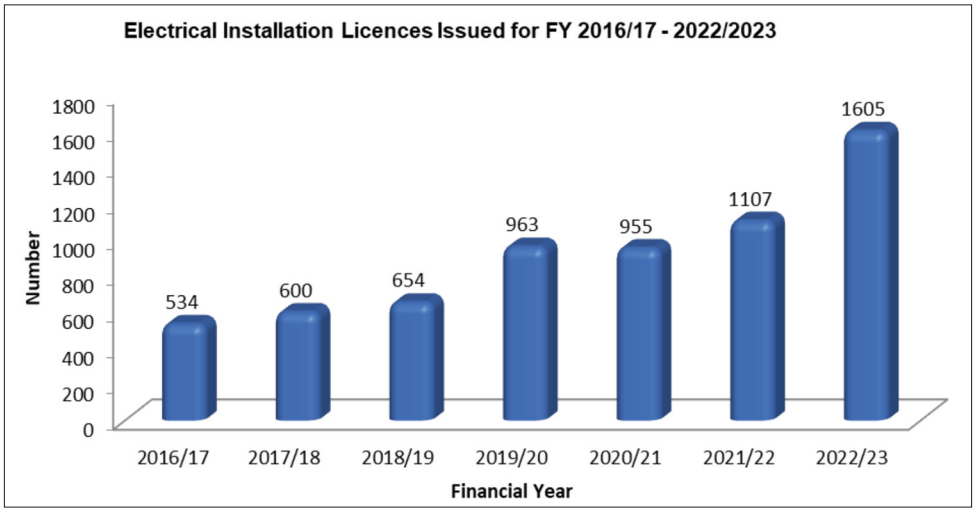


Figure 3: Trend of Electrical Installation Licences Issued from 2016/17 - 2022/2023

4. REGULATORY APPROVALS AND RESOLUTION OF COMPLAINTS AND DISPUTES

EWURA is mandated to approve the following; initiation of procurement of new electricity supply installations, power purchase agreements, as well as tariffs and fees charged by licensees and enforcement thereof. In addition, EWURA facilitates resolution of complaints and disputes between service providers and their customers. This section reports approvals granted and the resolution of complaints and disputes facilitated by EWURA.

4.1 Initiation of Procurement of New Electricity Supply Installations

Section 5 (d) of the Electricity Act, Cap. 131, mandates EWURA to approve the initiation of procurement of new electricity supply installations. However, during FY 2021/22, EWURA did not receive any application thereof, hence, as part of its regulatory functions, it continued to monitor the implementation of previously approved power projects with a total potential installed capacity of 586MW to 736MW as per **Table 1**.

Table 1: Initiation of Procurement of New Installation of Electricity Supply as of June 2023

S/N	Name of the Project	Capacity (MW)	Status
1.	Kinyerezi III Gas Fired Power Project by Shangtan Power Ltd	300	Not yet constructed
2.	Masigira Hydropower Project by Tanzania Masigira Power Ltd	72	Not yet constructed
3.	Kikagati-Murongo hydropower project is located at the border townships of Kikagati (in Uganda) and Murongo (in the Kyerwa District of Tanzania)	14	Commissioned and operating
4.	Combine Cycle Gas Power Project to be implemented by TANESCO at Somanga Fungu in Kilwa District	200 - 350	Not yet constructed
	Total	**236 - 736**	

4.2 Power Purchase Agreements

Section 25 (3) of the Electricity Act, Cap. 131 mandates the Authority to approve Power Purchase Agreements (PPA). During FY 2022/23, EWURA approved seventeen (17) Standardized Power Purchase Agreements (SPPAs) with total capacity of 62.850MW and continued to monitor the implementation of the projects for all twenty (20) signed SPPAs with total capacity of 66.856MW as per **Table 2**. Likewise, EWURA continued to monitor implementation of all approved PPAs between power producers and TANESCO as an off taker as shown in **Table 3**.

Table 2: Approved Standardized Power Purchase Agreements (SPPA) between TANESCO and Developers as of June 2023

S/N	Name of Developer	Capacity (MW)	Source Of Energy	Location	Approval Date
1.	Pinyinyi Hydro power project	1.90	Hydro	Arusha	1st October, 2021
2.	JUMEME Rural Power Supply	1.00	Solar	Sumbawanga	29th April, 2022
3.	JUMEME Rural Power Supply	1.00	Solar	Katavi	29th April, 2022
4.	Suma Hydro Power Ltd	4.00	Hydro	Mbeya	24th April, 2023
5.	Rukwa Generating Co. Ltd	0.95	Hydro	Rukwa	16th August, 2022
6.	Mofajusi Investment Ltd	3.00	Hydro	Katavi	24th April, 2023
7.	Franciscan Sisters of Charity	1.00	Hydro	Morogoro	24th April, 2023
8.	Bwelui Co. Ltd	4.70	Hydro	Mbeya	16th August, 2022
9.	Tangulf Nakakuta Energy Co. Ltd	5.00	Hydro	Ruvuma	16th August, 2022
10.	Luponde Hydro Ltd	2.00	Hydro	Njombe	16th August, 2022
11.	Bugando Natural Energy Ltd	5.00	Solar	Mwanza	29th December, 2022
12.	Tuliani Hydro Power Co. Ltd	5.00	Hydro	Morogoro	28th January, 2023
13.	SSI Energy Tanzania Ltd	10.00	Solar	Shinyanga	16th August, 2022
14.	Lung'ali Natural Resources Co. Ltd	1.28	Hydro	Iringa	24th November, 2022
15.	Nishati Lutheran (DKK) Investment Ltd	0.36	Hydro	Njombe	24th November, 2022
16.	Ruaha Energy	2.00	Solar	Dodoma	23rd March, 2023
17.	Ruaha Energy	0.56	Hydro	Mbeya	23rd March, 2023
18.	Bagamoyo Sugar Ltd	5.00	Biomass	Pwani	23rd February, 2023
19.	Infinite Power Resources Ltd	5.00	Solar	Songwe	30th March, 2023
20.	Infinite Power Resources Ltd	8.00	Solar	Mbeya	30th March, 2023
	Total	**66.75**			

Source: *EWURA*

Table 3: PPAs for Operating Power Plants as of June 2023

S/N	Name of Power Producer	Capacity (MW)	Energy Source	Location	COD	Expire Date
1.	Songas Tanzania Limited	189.00	Natural Gas	Dar es Salaam	June 2004	December 2023
2.	Darakuta Hydropower Development Co. Ltd.	0.32	Hydro	Magugu – Babati	1st April, 2016	2nd July, 2023
3.	Matembwe Village Community Co. Ltd.	0.49	Hydro	Njombe	November 2016	November 2031
4.	Mwenga Hydro Limited	4.00	Hydro	Mufindi	27th Sept, 2012	28th Feb, 2028
5.	Tulila Hydro Electric Plant Co. Ltd.	5.00	Hydro	Songea	1st Sept, 2015	2nd Aug, 2030
6.	Andoya Hydro Electric Power Co. Ltd.	1.00	Hydro	Mbinga	20th Mar, 2015	21st Aug, 2031
7.	Ngombeni Power Limited	1.40	Biomass	Mafia	February 2014	February 2019

S/N	Name of Power Producer	Capacity (MW)	Energy Source	Location	COD	Expire Date
8.	Tanganyika Planting Co. Ltd.	9.00	Biomass	Moshi	16th Sept, 2015	17th Jun, 2025
9.	Tanganyika Wattle Co. Ltd.	1.50	Biomass	Njombe	16th Jun, 2010	17th Jun, 2025
10.	NextGen Solawazi Limited	5.00	Solar	Kigoma	29th May, 2021	30th May, 2041
11.	Yovi Hydro Power Plant	0.995	Hydro	Morogoro	14th Nov, 2016	15th April. 2029
12.	Luponde Hydro Power Plant	0.90	Hydro	Njombe	28th Feb, 2021	29th Jun, 2035
13.	Madope Hydro Power Plant	0.70	Hydro	Njombe	28th Mar, 2023	29th Jun, 2035
	Total	**219.305**				

Source : *EWURA*

4.3 Rates and Charges

EWURA is empowered by Section 5 (b) of the Electricity Act, Cap. 131, to approve and enforce tariffs and fees charged by licensees. As of June 2023, the tariff orders that were in operation are described in **Table 4**. During FY-2022/23, EWURA approved five (5) tariff orders for Very Small Power Producers (VSPPs) namely: Powercorner Tanzania Limited; PowerGen Renewable Energy Limited; Watu na Umeme Tanzania Limited; Jumeme Rural Power Supply; and Husk Power Limited as per **Annex 5**. Very Small Power Producer (VSPP) means an electricity generator with an installed capacity of less than 15kW at a single site selling power to at least thirty retail customers, or of an installed capacity between 15kW and 100kW at a single site that either sells power at wholesale to distribution network operators or at retail directly to a customer or customers.

Also, EWURA continued to monitor the implementation of previously approved tariff orders, including the Electricity (Standardized Small Power Projects Tariff) for guiding SPPs selling power based on avoided cost to TANESCO before May 2015 and technology specific tariffs after May 2015 as per **Annex 6**; TANESCO tariff adjustment order and its amendment as per **Annex 7**; and Mwenga Power Services Limited (MPL) Multi Year Tariff Adjustment as per **Annex 8**.

Table 4: Tariff Orders as of June 2023

S/N	Name of Tariff Order	Government Notice	Date of Publication
1.	Electricity (Standardized Small Power Projects Tariff) Order, 2019.	GN.464	21st June, 2019
2.	TANESCO Tariff Adjustment Order, 2016	GN. 2016-010	1st April, 2016
3.	TANESCO Tariff Adjustment Order Amendment, 2020.	GN. 1020	4th December, 2020
4.	Mwenga Power Services Limited (MPL) Multi Year Tariff Adjustment, 2022.	GN. 61	26th January, 2022
5.	The Electricity Powercorner Tanzania Limited ("Powercorner") (Tariff) Order, 2022.	GN. 535	26th August, 2022
6.	The Electricity PowerGen Renewable Energy Limited ("PowerGen") (Tariff) Order, 2022.	GN. 533	26th August, 2022
7.	Electricity (Watu na Umeme Tanzania Limited) (Watu na Umeme) (Tariff Adjustment for Electricity Service) Order, 2022.	GN. 645	18th November, 2022
8.	The Electricity Jumeme Rural Power Supply ("Jumeme") (Tariff) Order, 2022.	GN.534	26th August, 2022
9.	The Electricity (Husk Power System Limited) (Husk Power) (Tariff Adjustment for Electricity Service) Order, 2022.	GN. 646	18th November,2022

Source*: EWURA*

4.4 Complaints and Dispute Resolutions

According to Section 7 of EWURA Act, Cap. 414, EWURA is mandated to facilitate resolution of complaints and disputes between service providers and their customers. During Financial Year 2022/23, EWURA received 154 complaints in electricity sub-sector and resolved 92 complaints, which is equivalent to 59.74% as per **Table 5**. Also, there is a decrease of complains received by 12.99% compared to FY-2021/22. The nature of complaints disputes included electricity billings, quality of power, connections, disconnection, rates and charges, trespass, and damage of property/ injury).

Table 5: **Status of Electricity Complaints from FY 2017/18 – 2022/23**

Year	Received	Resolved	Percentage (%)
2022/23	154	92	59.74
2021/22	177	132	74.58
2020/21	121	72	59.50
2019/20	122	93	76.23
2018/19	138	131	94.93
2017/18	134	65	48.51

Source: *EWURA*

EWURA will continue to raise awareness among service providers on the importance of providing satisfactory services to their customers, including resolving disputes before they are reported to EWURA. Further, EWURA will continue to raise awareness to customers of regulated services to report to the Authority on any disputes related to unsatisfactory provision of services that have been reported but not resolved by respective service providers.

5. TECHNICAL PERFORMANCE MONITORING

This section highlights the technical performance of the industry concerning electricity generation, transmission, distribution, supply and cross-border trading.

5.1 Electricity Generation Performance

Performance in electricity generation is analysed with respect to installed capacity, maximum demand, generation mix, plant availability, plant utilisation and energy dispatched.

5.1.1 Installed Capacity

As of June 2023, the installed capacity for entities carrying out electricity activities for sale was 1,911.46MW, where 1,874.34MW (98.06%) were connected to the main-grid, and 37.122MW (1.94%) to off-grids as per **Table 6** and detailed in **Annex 8**. There was a gross increase of 171.03 MW equivalent to 9.83% from 1,740.43MW in 2021/22. Likewise, there was an increase in the main grid from 1,694.55MW in 2021/22 to 1,874.34MW in 2022/23, equivalent to 179.79MW (10.61%), whilst there was a decrease in off-grid from 45.88MW to 37.12MW, equivalent to 8.76 (19.09%) due to expansion of the main grid as per **Figure 4**.

Table 6: Summary of Installed Capacity as of June, 2023

Description	Entity	Capacity (MW)	Share in Respective Grid	Share of Main-Grid and Off-Grid
Grid	TANESCO	1,661.95	88.67%	98.06%
	IPP (SONGAS)	189	10.08%	
	SPP owned by private entities	23.39	1.25%	
	Total	**1,874.34**	**100.00%**	
Off Grid	TANESCO	27.692	74.60%	1.94%
	SPP owned by private entities	7.4	19.93%	
	VSPP owned by private entities	2.03	5.47%	
	Total	**37.122**	**100.00%**	
Total	TANESCO	1,689.64	88.40%	100.00%
	IPP (SONGAS)	189	9.89%	
	SPP (all private entities)	30.79	1.61%	
	VSPP (all private entities)	2.03	0.11%	
	Total	**1,911.46**	**100.00%**	

Source: *TANESCO*

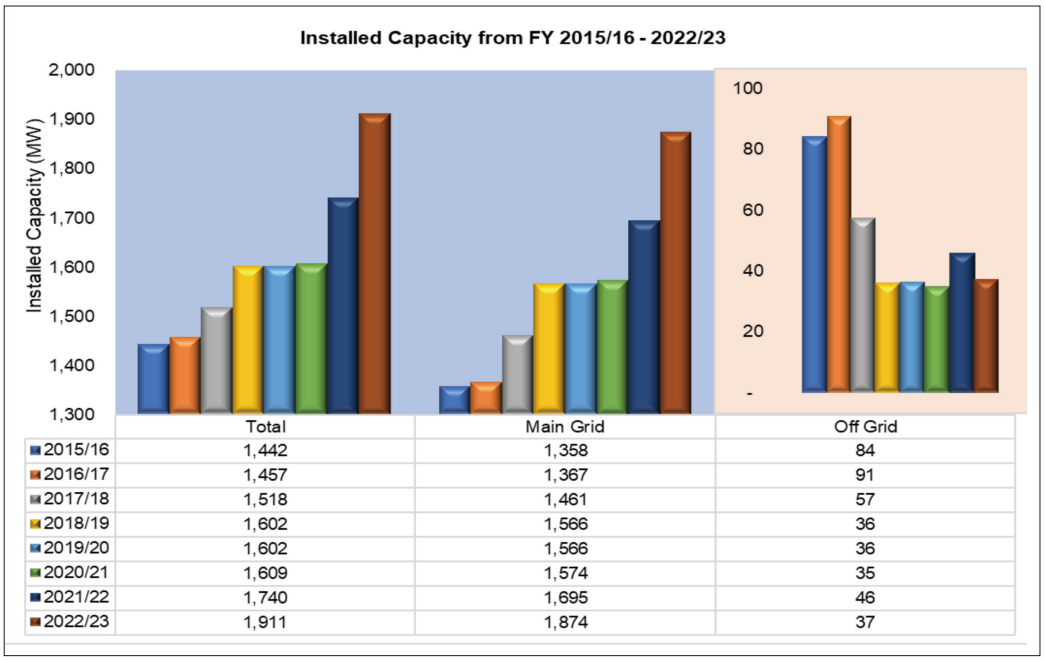


Figure 4: Trend in Installed Capacity from FY 2015/16 to 2022/23

5.1.2 Electricity Maximum Demand

During the period under review, electricity maximum demand (MD) was 1,470.50MW recorded on 12th June, 2023. This indicates an increase of 129.82MW (9.68%) compared to the year ended June 2022 which was 1,340.68MW as recorded on 26th May 2022 and illustrated in **Table 7**. The increase in maximum demand is attributed to the country's achievement in increasing electricity accessibility and connectivity to 78.4% and 37.7% as of July 2020 compared to 67.5% and 32.8% as of June 2017, respectively.

Table 7: Maximum Demand (MD) and Date

Year	MD (MW)	Date	Percentage Change (%)
2017/18	1,045.70	27th June 2018	-
2018/19	1,116.58	30th Nov.2018	6.78
2019/20	1,151.66	27th February 2020	3.14
2020/21	1,201.02	2nd June 2021	4.29
2021/22	1,340.68	26th May 2022	11.63
2022/23	1,470.50	12th June 2023	9.68

***Source**: TANESCO*

5.1.3 Energy Generation Mix Main Grid

For FY 2022/23, the energy generation mix comprised of natural gas (72.82%), hydropower (26.92%), liquid fuel – heavy fuel oil (HFO)/industrial diesel oil (IDO)/gas oil (GO) (0.14%) and biomass (0.12%) as depicted in **Figure 5**. There is a decrease in hydropower generation by 4.57% due to poor hydrology in catchment areas. Furthermore, the increase in electricity generation from natural gas by 4.5% was attributed to the commissioning of Kinyerezi I Extension (185MW).

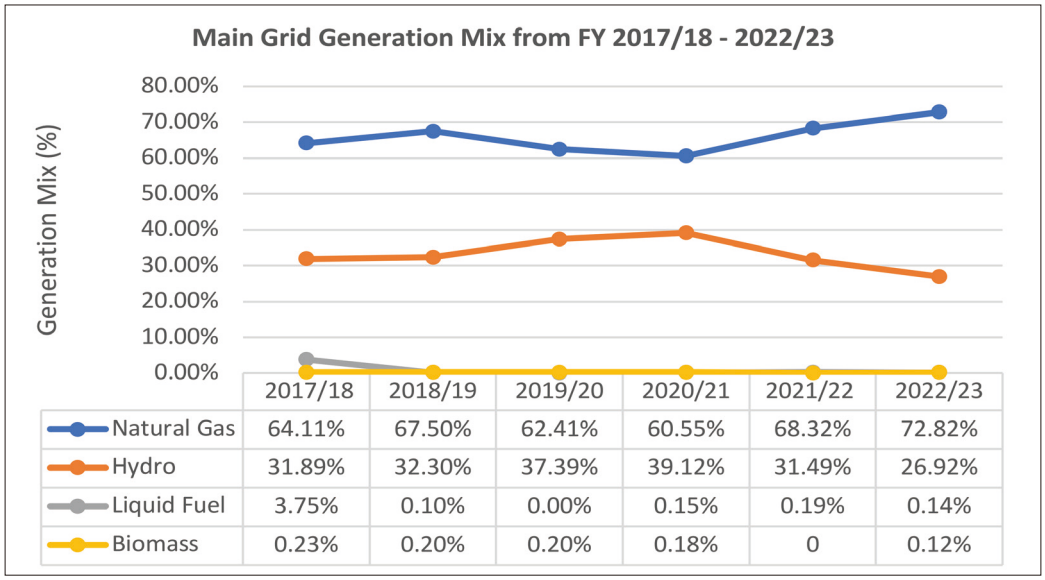


Figure 5: Energy Generation Mix (%) from FY 2017/18 – 2022/23

5.1.4 Electricity Generated and Imports

Energy generated and imported by entities carrying out electricity activities for sale was 9,864.77GWh, where 9606.56GWh (97.38%) was generated from the main-grid, 84.44GWh (0.86%) from off-grid, and 173.78GWh (1.76%) was imported through cross-border trade as per **Table 8**. There is a continued increase in energy dispatched from 2017/18 to 2022/23 as depicted in **Figure 6**. There is an increase of 714.44GWh (7.81%) from 9150.33 GWh in 2021/22.

Table 8: Electricity Generation and Imports for 2022/23

Description	GWh	Remarks
Main Grid	9,606.56 (97.38%)	8120.01 GWh (84.53%) - TANESCO
		1411.50 GWh (14.69%) – IPP (Songas)
		75.06 GWh (0.78%) - SPP owned by private entities
Off-Grid	84.44 (0.86%)	70.56GWh (83.56%) -TANESCO
		SPP ❖ 7.10GWh (8.41%) – NexGen Solawazi (Solar) ❖ 2.69GWh (3.19%) – Mwenga Hydro Ltd (Wind) VSPP ❖ 4.09GWh (4.84%) (2.03 MW*8,760hours*23% SPP capacity factor for solar).
Cross-Border Imports	173.778 (1.76%)	24.217GWh (13.94%) – Kigagati (Uganda)
		98.659GWh (56.77%) – Uganda
		50.902GWh (29.29%) – Zambia
Total	**9,864.77**	**8,190.56GWh (83.03%) - TANESCO**
		1,411.50 GWh (14.31 %) – IPP (Songas)
		88.94GWh (0.90%) - SPP & VSPP owned by private entities
		173.78GWh (1.76%) Cross Border Imports

Source: *TANESCO and EWURA*

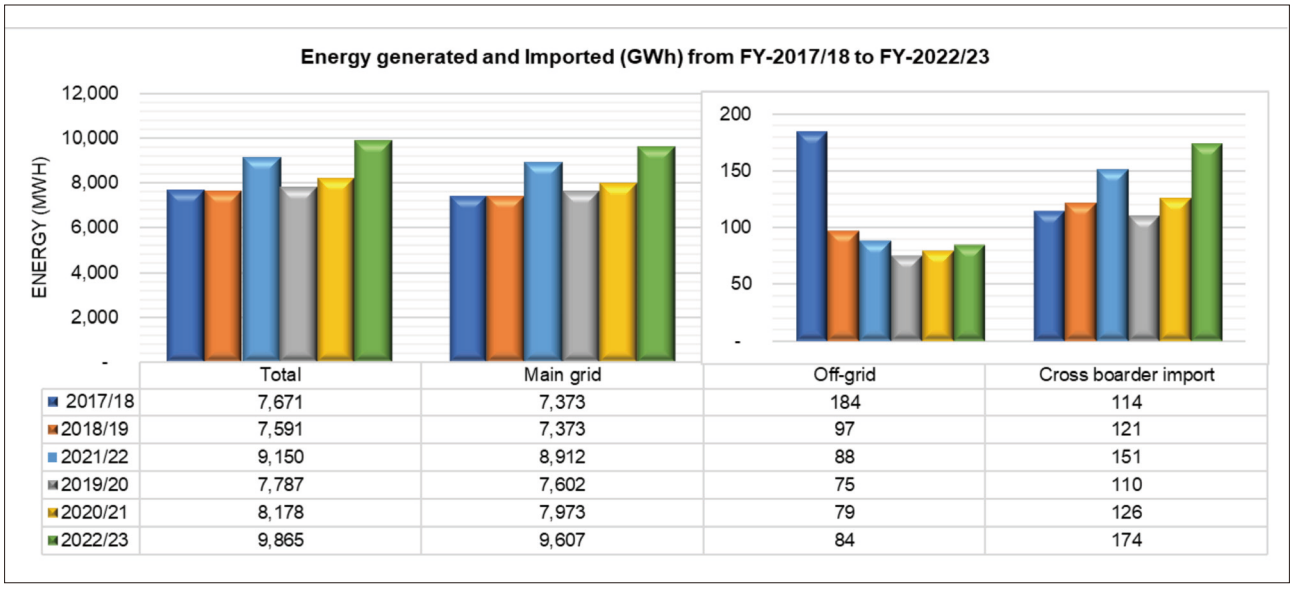
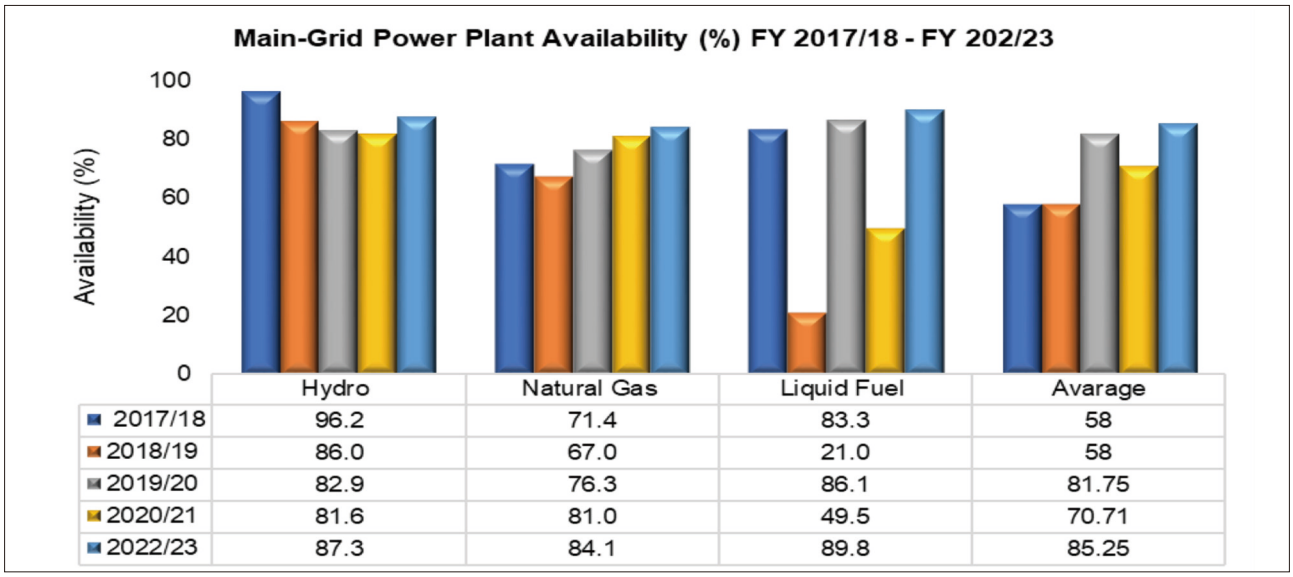


Figure 6: Energy Generated and Imported (GWh) from FY-2017/18 to FY 2022/23

5.1.5 Availability of Power Plants

During FY 2022/23, the availability of main grid power plants was 85.25%, whereby hydropower plants was 87.29%, gas-fired power plants (84.07%), and liquid fuel power plants (89.78%) as per **Figure 7** and **Annex 9**. There is an average increase of 1.78% compared to FY 2021/22 due to an increase in maintenance practices.



	Hydro	Natural Gas	Liquid Fuel	Avarage
2017/18	96.2	71.4	83.3	58
2018/19	86.0	67.0	21.0	58
2019/20	82.9	76.3	86.1	81.75
2020/21	81.6	81.0	49.5	70.71
2022/23	87.3	84.1	89.8	85.25

Figure 7: Main Grid Power Plant Availability (%) from 2017/19 to 2022/23

The off-grid power plant availability recorded for year 2022/23 was 86.67% compared to 91.91% recorded in 2021/22.This indicates a decrease of 5.24%. **Figure 8** shows the trend of off grid power plant availability and details thereof in **Annex 9**.

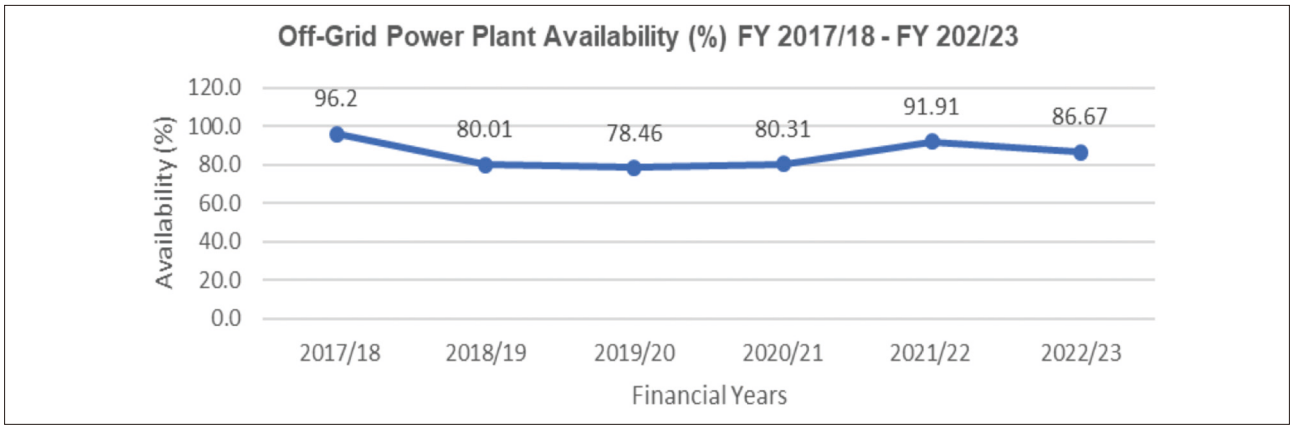


Figure 8: Off-grid power plant availability (%) FY 2017/18 - FY 2022/23

5.1.6 Power Generation Plants Utilisation

In FY 2022/2023, the average utilisation of all power plants in the main-grid reached 66.04%, higher than the utilisation recorded in FY 2021/2022, which was 40.56%. The utilisation of natural gas power plants increased by 17.90% from 61.27% in year 2021/22 to 79.17% in year 2022/23. Meanwhile, the utilisation of hydropower plants increased by 0.92% from 50.44% in FY 2021/22 to 51.36% in year 2022/23 as per **Figure 9** and details in **Annex 9**.

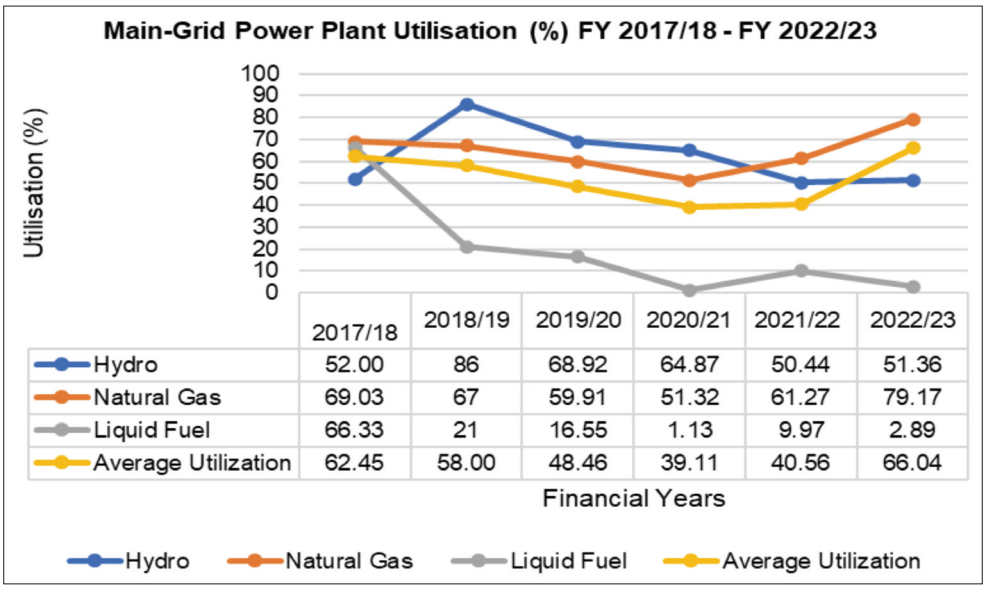


Figure 9: Main-Grid Power Plant Utilisation (%) FY 2017/18 – 2022/23

In FY 2022/23, off-grid average power plant utilisation was 38.37%, indicating a continuous decrease from 80.01% in FY 2018/19 as per **Figure 10** and details in **Annex 9.** The main reason for a decrease in plant utilisation is an expansion of the main grid in areas which were served by off-grid projects.

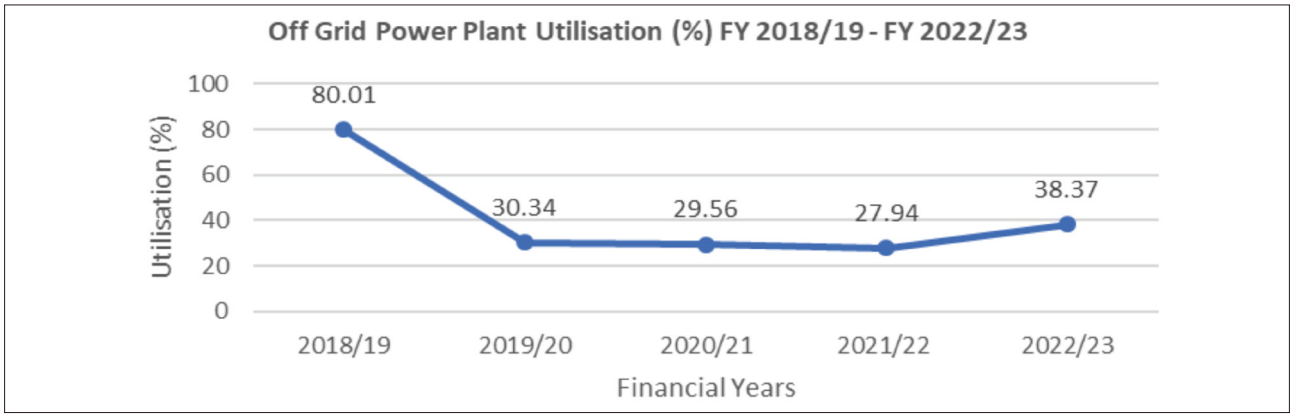


Figure 10: Off-grid power plant utilisation (%) FY 2018/19 – FY 2022/23

5.1.7 Private Sector Participation in Generation Segment

During FY 2022/23, private entities generating electricity for sale contributed a total of 221.70MW, an increase of 3.16MW (1.45%) from FY 2021/22 as per **Figure 11.** Details of electricity generated for sale by private entities during FY 2022/23 are depicted in **Table 9**.

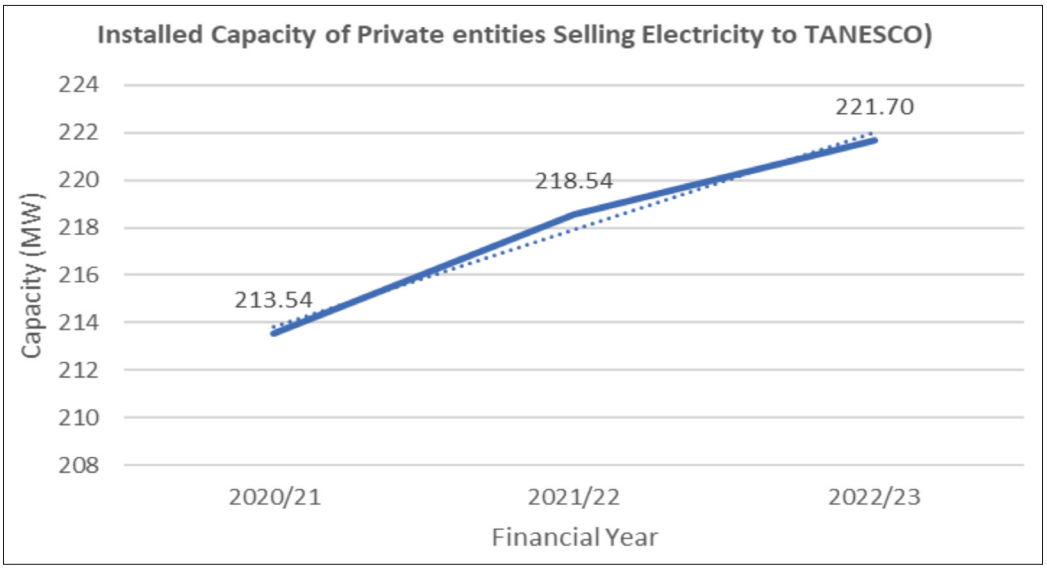


Figure 11: Installed capacity of Private Entities selling electricity to TANESCO

Table 9: Installed Capacity of Private Entities Generating for Sale

Grid	Installed Capacity (MW)	Entities Contribution
Main-grid	212.27	Songas Tanzania Limited (189.00MW), Mwenga Hydro Limited (4.00MW), Andoya Hydro Electric Power Limited (1.00), Tulila Hydro Electric (5.00MW), Matembwe Village Company Limited (0.59), Yovi Hydropower Company Limited (0.995MW), Darakuta Hydropower Development Company Limited (0.32MW), TPC (9.00MW), & TANNWAT (1.5MW)
Off-grid	9.42798	**VSPP (2.02798 MW)** Powercorner Tanzania Limited, 12 sites, Solar PV, 310.10kW; Jumeme Rural Power Supply Limited, 22 sites, solar PV, 1,231.00kW; PowerGen Renewable Energy Limited, 20 sites, Solar PV, 438.88kW; Watu na Umeme Limited, 1 site, Solar PV, 48kW; **SPP (7.4 MW)** NextGen Solarwazi Limited 5.00MW; Mwenga Hydro Limited 2.4MW (Wind)
Total	**221.69798**	

Source: *EWURA & TANESCO*

5.2 Electricity Transmission Performance

This section presents assessment of transmission performance with respect to entities conducting transmission services, status of infrastructure, the number of customers supplied, and supply reliability.

5.2.1 Entities Licensed to Conduct Transmission Services

During FY 2022/23, TANESCO continued to be the only entity licensed to carry out electricity transmission activities. It operates transmission lines in voltage levels of 66kV, 132kV, 220kV, and 400kV.

5.2.2 Electricity Transmission Infrastructure

As of 30th June 2023, the transmission network comprised of 6,850.19km, which indicates an increment of 711.19km (11.58%) from the previous length of 6,139km as per **Figure 12**. It also comprised 63 grid sub-stations, an increase of 1 sub-station from the previous year. There is an increase of 115MVA in capacity of sub-stations. This is due to commissioning of the new Nyakanazi sub-station (220kV, 80MVA) and expansion of existing sub-stations namely; Buzwagi (220kV, 30MVA) and Bunda (66kV, 5MVA).

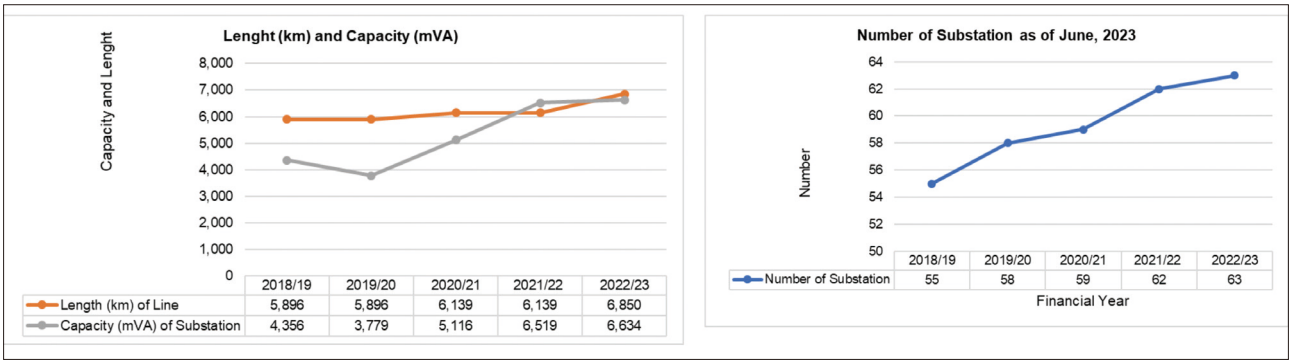


Figure 12: Electricity Transmission Infrastructure from 2018/19 – 2022/23

5.2.3 Customers Connected to the Transmission Infrastructure

As of June 2023, five (5) customers were connected to the transmission network. These are Bulyanhulu Gold Mine, which is connected to 220kV transmission line; Zanzibar Electricity Corporation (ZECO), Tanganyika Portland Cement, Tanga Cement, Rhino Cement, Buzwagi Gold Mine, and Nyamongo Gold Mine which are connected to 132kV transmission line.

5.2.4 Power System Reliability in Transmission Infrastructure

Power system reliability was analysed using System Average Interruption Frequency Index (SAIFI) and System Average Interruption Duration Index (SAIDI) at Transmission Connection Points (TCP). SAIFI is calculated as a ratio of total number of interrupted connection points (due to fault) to total number of connection points in the grid network (in this case 158 connection point) while SAIDI is calculated as a ratio of total interrupted connection point due to fault times restoration duration to total number of connection point. In addition, system reliability at each voltage level is analysed based on outage hours and frequency. TANESCO being the only licensee in electricity transmission activity has set a Key Performance Indicator (KPI) for SAIFI-CP of less than or equal to 12 per annum and for SAIDI-CP is 8hrs per annum.

During the period under review, SAIFI-CP was 9.69 indicating a decrease of 0.22 (2.22%) compared to SAIFI-CP of 9.91 recorded in 2021/22. On the other hand, achievement of SAIDI for the first record is 3.69hrs. The performance on reliability was within the target set by TANESCO as per **Figure 14**. Total average outage hours for each transmission line segment was 25.55 indicating an increase of 5.87 hours equivalent to 29.81% compared to previous year with outage hours of 19.68. Likewise, outage frequency increased by 3.98% from 4.39 in year 2021/22 to 4.57 in year 2022/23 as per **Figure 14**. Furthermore, there was no grid failure compared with the previous year as per **Figure 15**.

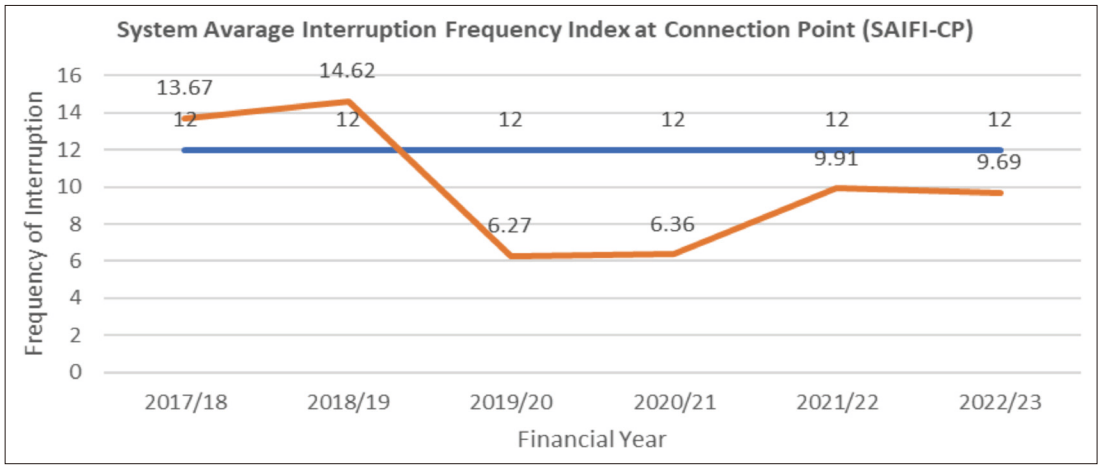


Figure 13: SAIFI-CP from FY 2017/18 – FY 2022/23

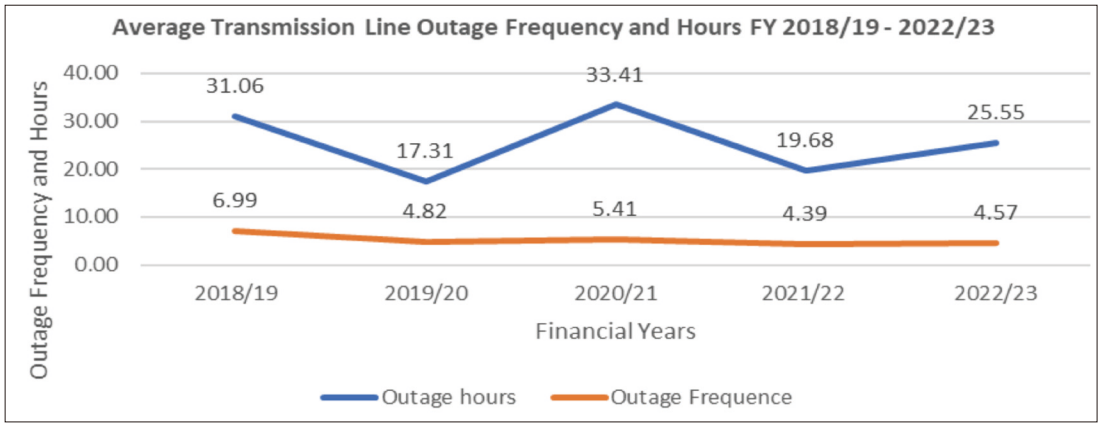


Figure 14: Average Transmission Line Outage Hours and Frequency FY 2017/18 – FY 2022/23

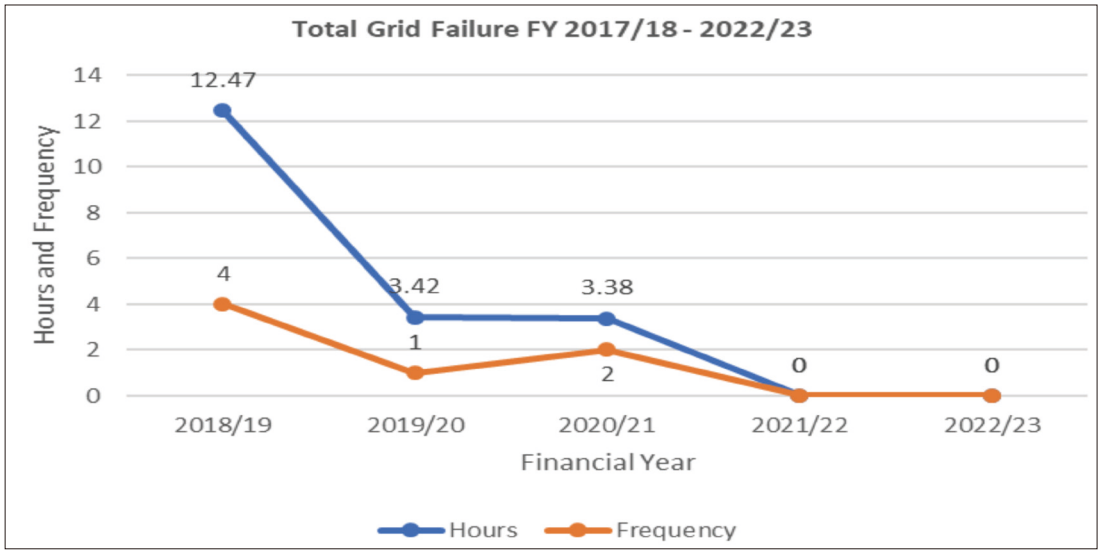


Figure 15: Total Grid Failure Frequency and Hours FY 2017/18 – FY 2022/23

5.3 Electricity Distribution Performance

Electricity distribution performance was assessed with respect to the number of licensed entities, the status of infrastructure, number of customers supplied, system losses, and supply reliability.

5.3.1 Entities Licensed and Registered to Conduct Distribution Services

During the period under review, two (2) entities were licensed, and four (4) entities were registered for conducting electricity distribution activities as per **Table 10**.

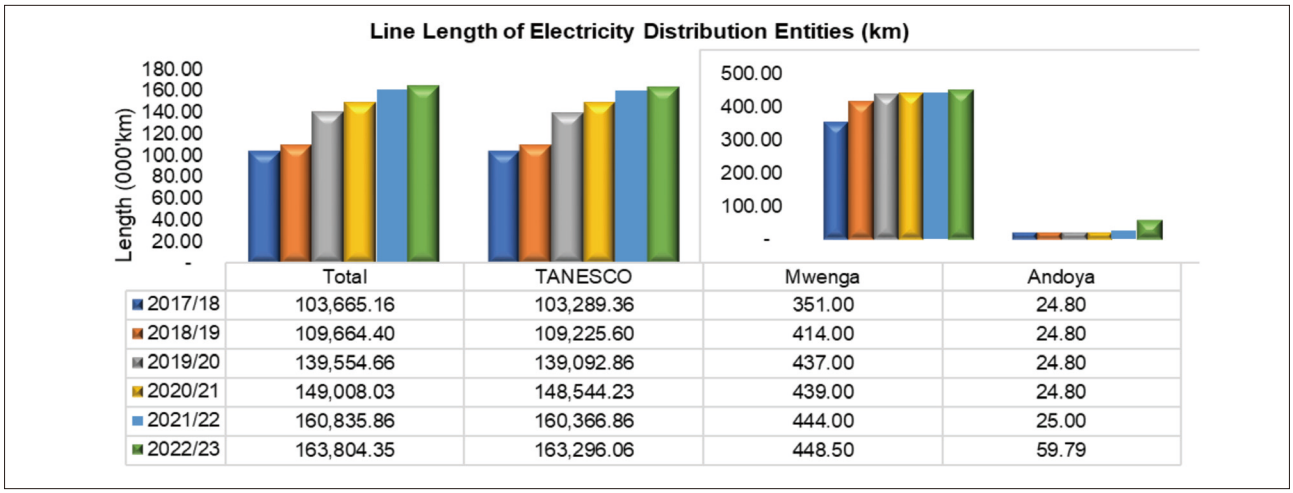
Table 10: Entities Licensed and Registered to Carry Out Electricity Distribution Activities in 2022/2023

Description	Name of Entity
Licensed Entities (Above/equal 1MW)	1. Tanzania Electric Supply Company (TANESCO)
	2. Mwenga Power Services Limited
Registered Entities (Below 1MW)	1. Powercorner Tanzania Limited, 12 site, Solar PV, 310.10kW
	2. Jumeme Rural Power Supply Limited, 22 sites, solar PV, 1,231.00kW
	3. PowerGen Renewable Energy Limited, 20 sites, Solar PV, 438.88kW
	4. Watu na Umeme Limited, 1 site, Solar PV, 48kW

Source: *EWURA Data Base*

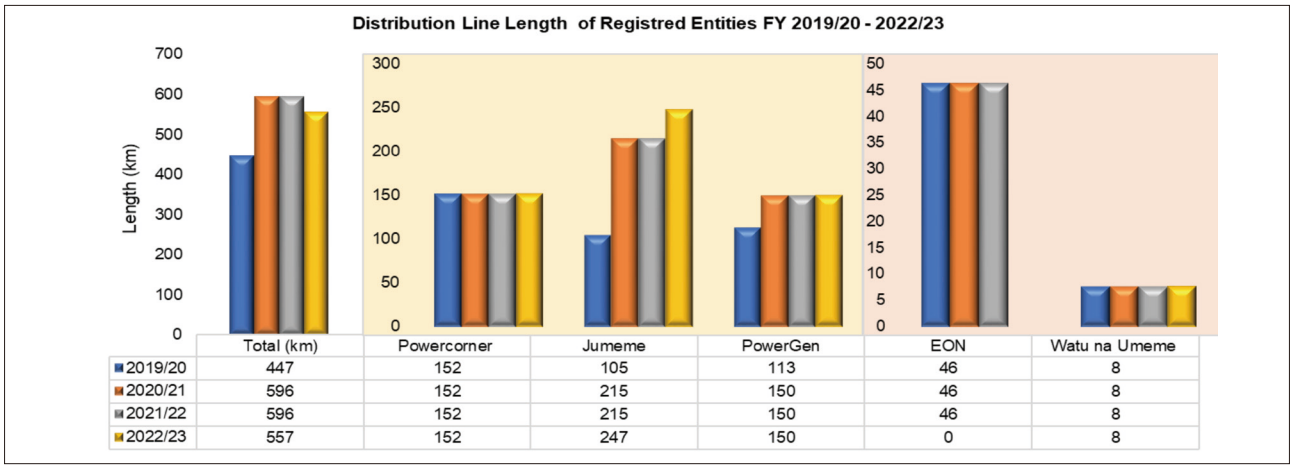
5.3.2 Electricity Distribution Line Length

As of 30thJune 2023, the total distribution network length was 164,361.41km, equivalent to an increase of 2,929.55km (1.81%) compared to 161,431.86km of year 2021/22. Out of the total length, 163,296.06km (99.35%) was for TANESCO, 448.5km (0.27%) for Mwenga and 59.79km (0.04%) for Andoya as per **Figure 16**. In addition, the registered entities contributed a total of 557.06km (0.34%) as per **Figure 17**.



	Total	TANESCO	Mwenga	Andoya
2017/18	103,665.16	103,289.36	351.00	24.80
2018/19	109,664.40	109,225.60	414.00	24.80
2019/20	139,554.66	139,092.86	437.00	24.80
2020/21	149,008.03	148,544.23	439.00	24.80
2021/22	160,835.86	160,366.86	444.00	25.00
2022/23	163,804.35	163,296.06	448.50	59.79

Figure 16: Line Length of Electricity Distribution Entities FY 2017/18 – FY 2022/23



	Total (km)	Powercorner	Jumeme	PowerGen	EON	Watu na Umeme
2019/20	447	152	105	113	46	8
2020/21	596	152	215	150	46	8
2021/22	596	152	215	150	46	8
2022/23	557	152	247	150	0	8

Figure 17: Distribution Line Length of Registered Entities FY 2019/20 – FY 2022/23

5.3.3 Electricity Accessibility and Connectivity

Electricity accessibility is defined as the percentage of population with access to electricity from the electricity supply point while electricity connectivity is defined as the percentage of population connected with power supply.

The Government, through REA and TANESCO, has facilitated access to electricity in rural areas. The two (2) licensed entities namely TANESCO and Mwenga Power Services, as well as four (4) registered entities, namely Powercorner Tanzania Limited, Jumeme Rural Power Supply Limited, PowerGen Renewable Energy Limited, and Watu na Umeme Limited were conducting electricity supply services in urban and rural areas during the period under review.

As a result of these initiatives, overall electricity accessibility increased from 67.5% in 2016/17 to 78.4% in 2019/20 as per **Table 11**. In rural areas, accessibility has increased from 49.3% to 69.8% respectively. On the other hand, overall connectivity has increased from 32.8% in 2016/17 to 37.7% in 2019/20, whereby in rural areas the connectivity has increased from 16.9% to 24.5% in 2019/20 as per **Table 12**. There is no published data on electricity accessibility and connectivity as of FY 2022/23.

Table 11: Electricity Accessibility

Year	Urban (%)	Rural (%)	Overall
2016/17	99.6%	49.3%	67.5%
2019/20	97.3%	69.8%	78.4%

Source: REA&NBS, (2020)

Table 12: Electricity Connectivity

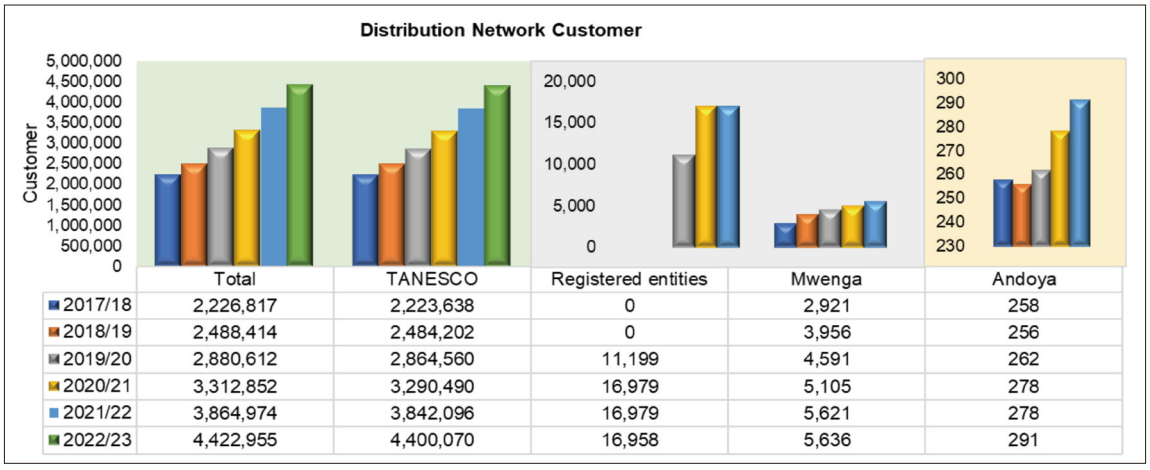
Year	Urban (%)	Rural (%)	Overall
2016/17	65.3%	16.9%	32.8%
2019/20	73.2%	24.5%	37.7%

Source: REA&NBS, (2020)

5.3.4 Customers

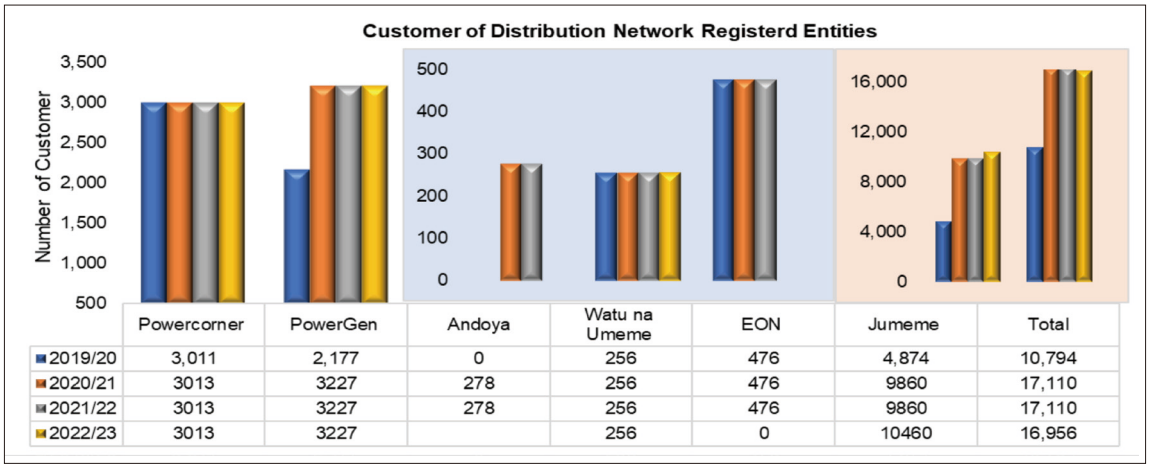
As of 30thJune 2023, a total of 4,422,955 customers were connected to electricity distribution networks, of which 4,400,070 customers (99.48%) were for TANESCO, 5,636 (0.13%) for Mwenga,

16,958 (0.38%) for registered entities and 291 (0.01%) for Andoya as per **Figure 18**. The total number of customers increased by 557,987 (14.44%) from 3,864,974 in FY 2021/22 to 4,422,955 in FY 2022/23. TANESCO customers increased by 557,974 (14.52%) from 3,842,096 in FY 2021/22. For registered entities, Jumeme had 10,460 customers, equivalent to 61.68% of all customers in that category as per **Figure 19**.



	Total	TANESCO	Registered entities	Mwenga	Andoya
2017/18	2,226,817	2,223,638	0	2,921	258
2018/19	2,488,414	2,484,202	0	3,956	256
2019/20	2,880,612	2,864,560	11,199	4,591	262
2020/21	3,312,852	3,290,490	16,979	5,105	278
2021/22	3,864,974	3,842,096	16,979	5,621	278
2022/23	4,422,955	4,400,070	16,958	5,636	291

Figure 18: Number of Customers for FY 2017/18 – FY 2022/23



	Powercorner	PowerGen	Andoya	Watu na Umeme	EON	Jumeme	Total
2019/20	3,011	2,177	0	256	476	4,874	10,794
2020/21	3013	3227	278	256	476	9860	17,110
2021/22	3013	3227	278	256	476	9860	17,110
2022/23	3013	3227		256	0	10460	16,956

Figure 19: Customers of Registered Entities FY 2019/20 – FY 2022/23

5.3.5 Power System Reliability in the Distribution Infrastructure

Power system reliability indices were assessed based on Tanzania Standard TZS 1374:2011 (Power quality–Quality of service and reliability). In this report, the Indices calculated were System Average Interruption Frequency Index (SAIFI) which indicates the average number of interruptions each customer experiences in a particular year, System Average Interruption Duration Index (SAIDI), which indicates the average outage duration (minutes) each customer experiences in a particular year, and Customer Average Interruption Duration Index (CAIDI), which indicates average duration (minutes) that each outage lasts. During the period under review, the performances of licensed and registered entities in system reliability are detailed below.

a) TANESCO

TANESCO had a SAIFI of 26 against a standard benchmark of 3 interruptions per customer per year, SAIDI of 1,536 against standard benchmark of 650 minutes per customer per year and CAIDI of 59

against standard benchmark of 4 minutes per interruption event as per **Table 13**. The performance on SAIDI has improved, which indicates a reduction of average outage duration experienced by customers in a year from 26,820 minutes in FY 2021/22 to 1,536 minutes in FY 2022/23, equivalent to 94.27% reduction. Also, the performance on CAIDI has improved, which indicates a reduction of average outage duration per interruption event experienced by customers in a year from 2,438.18 minutes in FY 2021/22 to 59 minutes in FY 2022/23, which is equivalent to 97.58% reduction.

Table 13: **TANESCO Power Reliability Indices from FY 2018/19 to FY 2022/23**

Index	Unit	Standard index	2018/19	2019/20	2020/21	2021/22	2022/23
SAIFI	Interruptions per Customer per year	**3.00**	46.03	218.00	48.00	11.00	26.00
SAIDI	Minutes per Customer per year	**650.00**	2,784.00	10,560.00	22,380.00	26,820.00	1,536.00
CAIDI	Minutes per Interruption event per year	**4.00**	60.50	48.44	466.25	2,438.18	59.07

Source: *TANESCO*

b) Mwenga Power Services Ltd

Mwenga had a SAIFI of 30 against standard benchmark of 3 interruptions per customer per year, SAIDI of 1,737 against standard benchmark of 650 minutes per customer per year and CAIDI of 58 against standard benchmark of 4 minutes per interruption event as per **Table 14**. The performance on CAIDI has improved, which indicates a reduction of average outage duration per interruption event experienced by customers in a year from 98.57 minutes per interruption event in FY 2021/22 to 58.00 in FY 2022/23 which is equivalent to 41.16% reduction.

Table 14: Mwenga Power Reliability Indices from FY 2018/19 to FY 2022/23

Index	Unit	Standard index	2018/19	2019/20	2020/21	2021/22	2022/23
SAIFI	Interruptions per Customer per year	**3.00**	19.10	35.93	28.00	14.00	30.00
SAIDI	Minutes per Customer per year	**650.00**	803.16	1570.20	1848.00	1380.00	1,737.00
CAIDI	Minutes per Interruption event per year	**4.00**	42.05	43.70	66.00	98.57	58.00

Source: *Mwenga*

c) Andoya Hydro Electric Power Ltd

Andoya had a SAIFI of 97 against standard benchmark of 3 interruptions per customer per year, SAIDI of 102, which is within acceptable standard benchmark of 650 minutes per customer per year and CAIDI of 1.05, which is also within acceptable standard benchmark of 4 minutes per interruption event as per **Table 15**. The performance on SAIFI has improved, which indicates a reduction of average number of outage interruptions experienced by customers in a year from 193 in FY 2021/22 to 97 in FY 2022/23, which is equivalent to 49.74% reduction. Also, the performance on SAIDI has improved, indicating a reduction of average outage duration experienced by customers in a year from 328 minutes in FY 2021/22 to 102 minutes in FY 2022/23, which is equivalent to a 68.90% reduction. Furthermore, the performance on CAIDI has improved, which indicates a reduction of average outage duration per interruption event experienced by customer in a year from 57 minutes in FY 2021/22 to1.05 minutes in FY 2022/23, equivalent to a 98.16% reduction.

Table 15: Andoya Power Reliability Indices from FY 2018/19 to FY 2022/23

Index	Unit	Standard index	2018/19	2019/20	2020/21	2021/22	2022/23
SAIFI	Interruptions per Customer per year	**3.00**	124.00	1.00	1.00	193.00	97.00
SAIDI	Minutes per Customer per year	**10.80**	255.30	66.00	8.40	328.00	102.00
CAIDI	Minutes per Interruption event per year	**4.00**	2.10	66.00	8.40	1.70	1.05

***Source**: Andoya*

5.3.6 New Connections to Power Supply

During the period under review, TANESCO connected 554,867 new customers, equivalent to 99.05% of its customers who completed the application process for power connection. This includes pending applications from previous years. In addition, Mwenga Power Services Limited connected 495 new customers, equivalent to 100% of its customers who completed the application process for power connection. On its part, Andoya Hydro Electric Power Company Limited connected 13 new customers, equivalent to 100% of those who completed their applications. The new power connections are illustrated in **Table 16.**

Table 16: Electricity Distribution Customer Connection

Licensee	Year	Applications[1]	Connections	Pending	Achievement (%)
TANESCO	2022/23	560,208	554,867	5,341	99.05
	2021/22	619,911	551,606	68,305	88.98
	2020/21	684,655	425,930	258,725	62.21
	2019/20	413,307	380,358	32,949	92.03
	2018/19	276,764	260,564	16,200	94.15
	2017/18	273,272	197,543	75,729	72.20
MWENGA	2022/23	495	495	00.0	100.0
	2021/22	193	169	24	87.56
	2020/21	578	514	64	88.93
	2019/20	800	780	20	98.00
	2018/19	1035	1035	0	100.00
	2017/18	387	380	7	98.00
ANDOYA	2022/23	13	13	0	100.00
	2021/22	26	13	13	50.00
	2020/21	0	0	0	0.00
	2019/20	0	0	0	0.0
	2018/19	6	6	0	100.00
	2017/18	64	20	44	31.00

***Source**: TANESCO, Mwenga & Andoya*

5.4 Energy Losses

Analysis of energy losses was performed to three (3) utilities of TANESCO, Mwenga and Andoya. In accordance with the Electricity Supply Industry Reform Strategy and Roadmap (ESI-RSR), 2014, Section 6.2 to 6.4, the desired total losses in the electricity supply industry are supposed to be 12% by 2025. The ESI-RSR sets the trajectory for loss reduction in the tune of 14%-12% from July 2021 to June 2025. However, the desired targets do not allocate the portion for distribution segment. EWURA will ensure that utilities comply with the best practices in reducing energy losses including;

1 Application means the applicant has completed all application requirements.

compliance to standards of constructing infrastructure, the use of prepaid meters, installation of pre-paid meters, and avoiding energy theft. The details of energy losses are described below.

a) TANESCO

TANESCO had a total energy loss of 14.57% of which, transmission loss was 5.88% as per **Table 17** and distribution loss was 8.69% as per **Table 18**. The recorded total energy loss is higher than the set targets in the ESI-RSR where the desired total losses is supposed to be within a range of 14%-12% from July 2021 to June 2025. The total energy losses have decreased by 0.86% compared to the previous year which had a total energy loss of 15.43%. The utility is undertaking several initiatives to reduce losses, including construction of new and rehabilitation of the existing transmission and distribution infrastructure, as well as conducting operational campaigns against energy theft. EWURA will continue to monitor the performance of the licensee to ensure timely completion of projects aimed at reducing energy losses.

Table 17: Transmission Energy Losses for TANESCO

Description	2017/18	2018/19	2019/20	2020/21[2]	2021/22[3]	2022/23
Energy Received in Transmission System (GWh)	6,742.41	7,413.95	7,531.11	7,891.33	8,821.89	9,505.20
Energy Sent for Distribution (GWh)	6341.68	6975.21	7085.79	7424.12	8232.26	8,943.69
Energy for Auxiliaries	3.56	3.17	2.41	2.76	70.37	2.92
Losses (GWh)	397.16	435.55	442.92	464.46	519.26	558.60
Losses (%)	**5.89**	**5.87**	**5.89**	**5.89**	**5.89**	**5.88**

Source: *TANESCO*

Table 18: Electricity Distribution Losses for TANESCO

Year	Energy Distributed (GWh)[4]	Energy Sales (GWh)[5]	Losses (GWh)	Losses (%)
2022/23	8,403.65	7,673.69	729.96	8.69
2021/22	7,854.39	7,167.31	687.09	8.75
2020/21	7,622.27	6,898.49	723.78	9.50
2019/20	7,257.64	6,574.70	682.94	9.41
2018/19	7,314.14	6,557.13	757.01	10.35
2017/18	6,642.67	6,341.68	300.99	4.53

Source: *TANESCO*

b) Mwenga Power Services Ltd

The Mwenga Power Services Limited had a distribution loss of 5.99%, which is within the recommended value, but slightly less by 0.01 % than that of previous years, whereby the loss was 6.00% as per **Table 19**.

2 Energy received for distribution for the year 2020/21 has been reconciled.
3 Energy losses for the year 2021/22 have been reconciled.
4 This includes imports and off-grid plants but excludes units sold to Zanzibar
5 This does not include units sold to Zanzibar

Table 19: Electricity Distribution Losses for Mwenga

Year	Energy Distributed (GWh)	Energy Sales (GWh)	Losses (GWh)	Losses (%)
2022/23	21.55	20.26	1.29	5.99
2021/22	30.00	29.00	1.8	6.00
2020/21	25.28	23.891	1.389	5.49
2019/20	20.68	19.701	0.979	4.73
2018/19	15.86	15.182	0.673	4.24
2017/18	19.18	18.473	0.707	3.69

Source: *Mwenga Power Services Ltd*

c) Andoya Hydro Electric Power Co. Ltd

Andoya had a distribution loss of 1.33%, indicating continuous improvement compared to the previous year where the loss was 3.98% as per **Table 20.**

Table 20: Electricity Distribution Losses for Andoya

Year	Energy Distributed (GWh)	Energy Sales (GWh)	Losses (GWh)	Losses (%)
2022/23	0.602	0.594	0.008	1.330
2021/22	3.013	2.893	0.120	3.980
2020/21	4.041	3.865	0.180	4.340
2019/20	2.792	2.640	0.156	5.590
2018/19	2.742	2.584	0.158	5.750
2017/18	2.995	2.773	0.222	7.410

Source: *Andoya Hydro Electric Power Co. Ltd*

5.5 Investment in Electricity Infrastructure

Section 6(1)(c) of the Electricity Act 2008, mandates the Authority to promote least-cost investment and the security of supply for the benefit of customers. During the period under review, several projects were under development as detailed below.

5.5.1 Public Power Plants Under Construction

TANESCO is currently developing power plants which are at various stages of implementation with a total potential installed capacity of 2,196.70MW. Upon completion of the strategic projects, Tanzania will have reserve capacity enough to cater for current and forecasted increased demand due to industrialisation and rural electrification. Furthermore, the excess generation capacity will enable the country to trade across the Eastern African Power Pool (EAPP) and Southern African Power Pool (SAPP). Details of the projects are as per **Table 21**.

Table 21: Public Power Plant Projects Currently Under Development

Name of Project	Capacity (MW)	Energy Source	Expected COD	Location
Julius Nyerere Hydro Power Project	2,115.00	Hydro	2024	Pwani
Rusumo Hydro Power Project [6]	26.70	Hydro	2023	Kagera
Shinyanga Solar Power Project (Kishapu)	50.00	Solar	2024	Shinyanga
Mafia Hybrid Power Project	5.00	Solar and diesel	2024	Pwani
Total	**2,196.70**			

Source: *TANESCO*

5.5.2 Private Power Plants Under Construction

As of June 2023, ongoing projects being implemented by private investors expect to contribute 100.51MW as per **Table 22**. This will enhance government initiatives to ensure security of electricity supply in the country. This has been achieved through establishment of a favorable regulatory framework that promotes private sector investment in the electricity sub-sector.

Table 22: Approved SPPAs for Private Power Plants Under Development

S/N	Name of Power Producer	Capacity (MW)	Source	Expected COD	Location
1	Madope HPP	1.70	Hydro	2025	Njombe
2	Maguta HPP	1.20	Hydro	2025	Iringa
3	Ijangala HPP	0.36	Hydro	2025	Njombe
4	Kahama solar	10.00	Solar PV	2025	Shinyanga
5	Diwale HPP	5.00	Hydro	2025	Morogoro
6	Pinyinyi HPP- Ngorongoro	1.90	Hydro	2025	Arusha
7	Jumeme	1.00	Solar PV	2025	Sumbawanga
8	Jumeme	1.00	Solar PV	2025	Katavi
9	Suma HPP	4.00	Hydro	2025	Rungwe
10	Rukwa Generating Company	0.95	Hydro	2025	Rukwa
11	Lung'ali Natural Resources Company Limited	1.28	Hydro	2025	Njombe
12	Nishati Lutheran (DKK) Investment Limited	0.36	Hydro	2025	Njombe
13	Mofajus Investment Limited	3.00	Hydro	2025	Katavi
14	Franciscan Sisters of Charity	1.00	Hydro	2025	Morogoro
15	Bwelui Company Limited	4.70	Hydro	2025	Mbeya
16	Tangulf Nakatuta Energy Company Limited	5.00	Hydro	2025	Ruvuma
17	Luponde Hydro Limited	2.00	Hydro	2025	Njombe
18	Ms. Ruaha Energy	0.56	Hydro	2026	Mbeya
19	Ms. Ruaha Energy	2.0	Hydro	2026	Dodoma
20	Infinity Power Resources Limited	5.0	Solar	2026	Songwe
21	Infinity Power Resources Limited	8.0	Solar	2026	Mbeya
22	Bagamoyo Sugar	1.5	Biomass	2026	Pwani
23	Bugando natural Energy Limited	5.0	Solar	2026	Magu
24	Turiani Hydro Power Co. Ltd.	5.0	Hydro	2026	Morogoro
25	M/S ZBS Investment Ltd.	8.0	Solar	2026	Mara
26	M/S ZBS Investment	6.0	Solar	2026	Dodoma
27	SSI Energy Tanzania Ltd	10.0	Solar	2026	Shinyanga
28	M/S Convivium Investment Tanzania Ltd.	5.0	Solar	2026	Mwanza
	Total	**100. 51**			

Source: *EWURA*

6 Rusumo Hydro Power Project (80MW) is a regional project developed by the Government of the United Republic of Tanzania (26.7MW), the Government of the Republic of Rwanda (26.7MW), and the Government of the Republic of Burundi (26.7MW).

5.5.3 Transmission Projects Currently Under Development

TANESCO is implementing electricity transmission projects which during the year under review were at various stages of development. The projects under construction have a total length of 2,667km of transmission line and sub-stations capacity of 1,110 MVA. The status of the implementation of the projects for transmission line and sub-stations are indicated in **Table 23** and **Table 24** respectively.

Table 23: Transmission Line Projects Currently Under Development

S/N	Name Of Transmission Line Project	Voltage Level	Route Length (Km)	Expected COD
1	Kenya - Tanzania Interconnector Project (Singida – Arusha – Namanga)	400kV	414	2023
2	SGR Lot 2-1 - Morogoro (Msamvu) - Dodoma (Ihumwa)	220kV	237	2023
3	SGR Lot 2-2 -Dodoma (Ihumwa) Singida (Makutupora)	220kV	176	2023
4	JNHPP- Chalinze	400kV	160	2023
5	Tabora-Kigoma	132kV	395	2024
6	Tabora-Katavi	132kV	381	2024
7	Kigoma-Nyakanazi	400kV	280	2024
8	Tanzania-Zambia Interconnector Project (TAZA)	400kV	624	2025
	Total		**2667**	

Source: *EWURA*

Table 24: Transmission Sub-stations Projects Currently Under Development

S/N	Substation Name	Description	Voltage level	MVA	Expected COD
1	Lemugur substation (Arusha)	New substation	400/220/33kV	250	2023
2	Ifakara substation (Morogoro)	New substation	220/33kV	20	2023
3	Urambo (Tabora)	New substation	132/33kV	35	2024
4	Nguruka (Kigoma)	New substation	132/33kV	15	2024
5	Ipole (Tabora)	New substation	132/33kV	15	2024
6	Inyonga (Katavi)	New substation	132/33kV	15	2024
7	Mpanda (Katavi)	New substation	132/33kV	35	2024
8	Makumbusho (Dar es salaam)	Additional Capacity	132/33kV	45	2023
9	Msanvu (Morogoro)	Additional Capacity	220/33kV	120	2023
10	Bulyanhulu (Shinyanga)	Additional Capacity	220/33kV	120	2023
11	Nyakato(Mwanza)	Additional Capacity	220/132/33kV	60	2023
Total				**530**	

Source: *TANESCO*

In addition to the above projects, the Government is implementing the National Grid Stabilisation Project *(Gridi Imara)* that intends to strengthen transmission and distribution infrastructure across the country. As described in the budget speech of the Minister of Energy for FY 2023/24, the project aims at commissioning 6,000 new transformers, 46,200km of transmission and distribution lines, installation of 700,000 new energy meters, construction of 14 new grid sub-stations, installation of

27 power transformers and construction of 948km of 132kV and 220kV transmission lines. This project is being implemented in phases across four (4) years. In the first phase of this project which is ongoing, a total number of twenty-six (26) projects are implemented as per **Annex 4**.

6. FINANCIAL PERFORMANCE

TANESCO is the main supplier of electricity in Tanzania. The company imports power from Uganda (24MW) and Zambia (11MW) for Kagera and Rukwa regions, respectively. TANESCO also has long-term power purchase agreements with Independent Power Producers and Small Power Producers (IPPs and SPPs), namely, Songas Tanzania Limited (189MW), Tanganyika Wattle Company Limited (1.5MW), Tanganyika Planting Company Limited (9MW), Andoya Hydro Electric Power Company Limited (1MW), Mwenga Hydro Limited (4MW), Tulila Hydro Electric Plant Company Limited (5MW), Yovi Hydropower Company Limited (0.95MW), Matembwe Village Company Limited (0.59MW), Darakuta Hydropower Development Company Limited (0.32MW), Luponde Hydro Limited (0.9MW) and NextGen Solawazi Limited (5MW). Therefore, this section focuses on the financial performance of 12 entities from FY 2020/21 to 2022/23.

6.1.1 Revenue Generation

In FY 2022/23, the average revenue from sale of electricity of all entities increased by 4% compared to an increase of 12% recorded in FY 2021/22. The revenue increased from TZS 2,112.6 billion to TZS 2,204.4 billion. This represents an overall revenue increase by 0.2%. In addition to that, 89% of revenue was generated from the sale of electricity and 11% from other sources. ***Figure 20*** shows the three-year trend of revenue from sale of electricity and other income and is detailed in **Annex 11**.

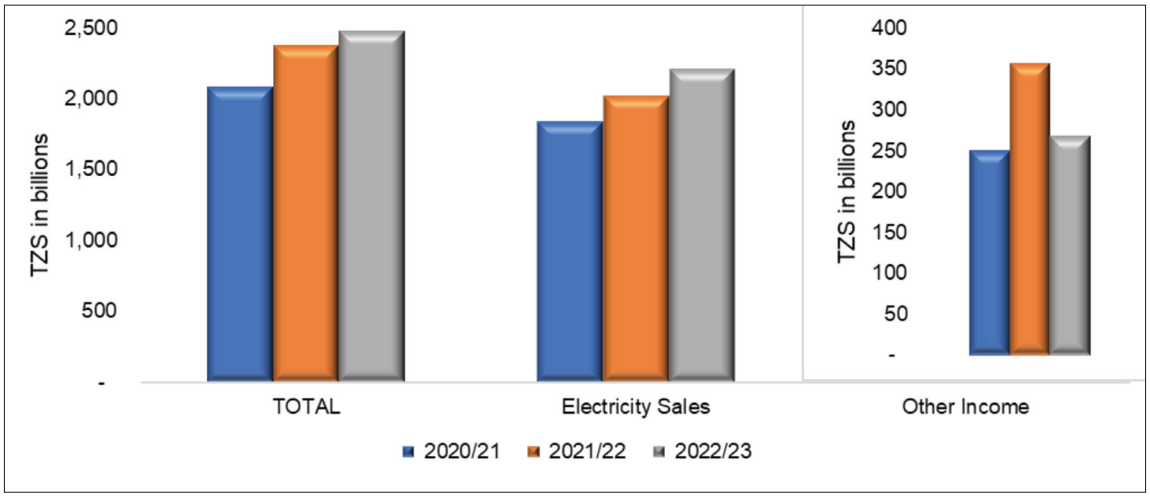


Figure 20: Total Revenue by Source (TZS in million)

During FY 2022/23, the increased revenue generated from the sale of electricity was associated by TANESCO (6%), Tulila (38%), NextGen Solawazi (51%), Mwenga Power (33%) and Luponde (8%). Utilities that recorded decrease in revenue from sale of electricity were Songas Tanzania Limited (7%), Mwenga Hydro Limited (10%), Andoya Hydro Electric Power Company Limited (72%), Tanganyika Planting Company (27%), Tanganyika Wattle Company Limited (8%), Yovi Hydropower Company Limited (24%), Matembwe Village Company Limited (82%) and Darakuta Hydropower Development Company Limited (31%) due to mechanical breakdown of generating units and inadequate hydrology conditions. Revenue generated by each utility is presented in **Figure 21** and detailed in **Annex 11**.

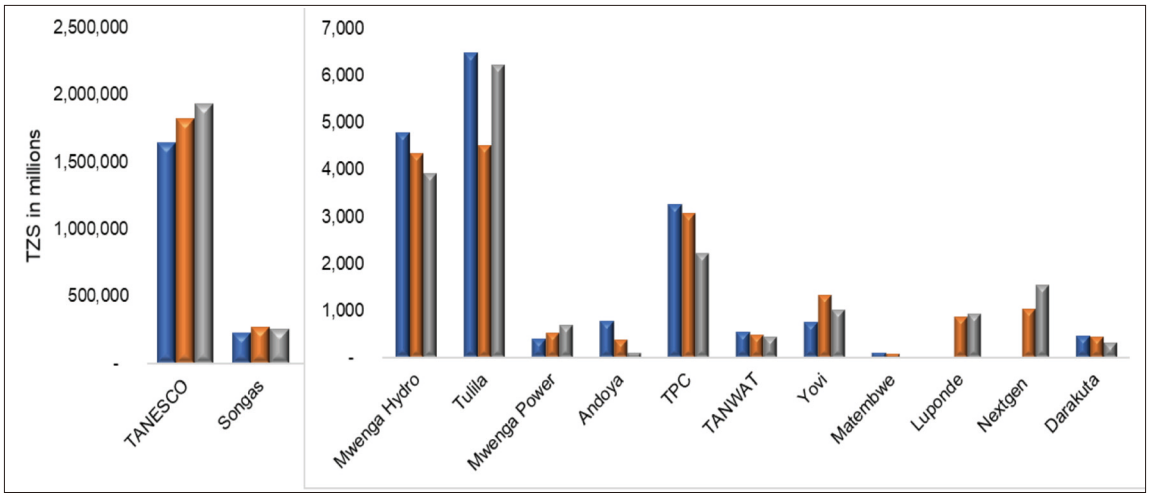


Figure 21: Revenue from Sale of Electricity by Utility

Being a public utility, TANESCO generates most of its revenue from sales of electricity. The sales made to general Usage Customers (T1) contributed to 50%, High Voltage supply customers (T3) 38%, whilst Low Voltage Supply (T2) and Domestic Low Usage (D1) customers amounted to 10% and 2% of the total electricity sales revenue respectively. The consumption pattern of power remained the same as per previous financial year.

During FY 2022/23, TANESCO recorded a general increase of sales from electricity by 6%, compared to an increase of 11% recorded in the previous year. The rise was associated with an increase of 536,952 new customers. The increased revenue was also associated with increased power consumption by an average of 7%, that is, from Domestic Low Usage (12%), General Usage (6%), High Voltage Supply (5%) and Low Voltage Supply (6%). **Figure 22** shows a three-year trend of TANESCO's revenue by customer category and is detailed in **Annex 14**.

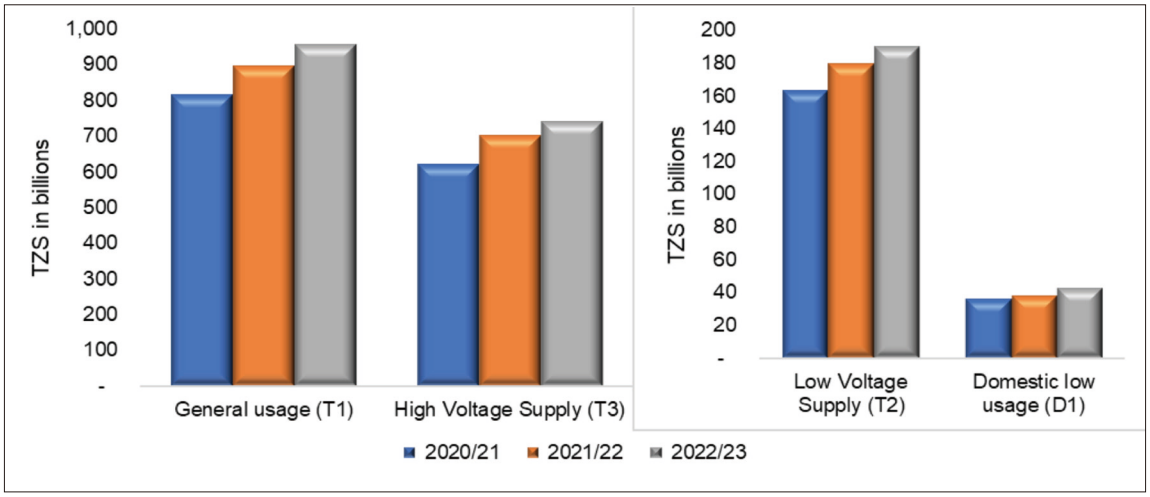


Figure 22: TANESCO Revenue by Customer Category (TZS Billions)

6.1.2 TANESCO Cost Structure

The cost structure for TANESCO's operations was mainly dominated by generation and transmission costs that covered 39%, distribution (21.5%), purchase of electricity (15%), depreciation (15.6%), administration costs (8%) and other costs amounted to 2%. **Figure 23** shows the TANESCO's composition of cost structure.

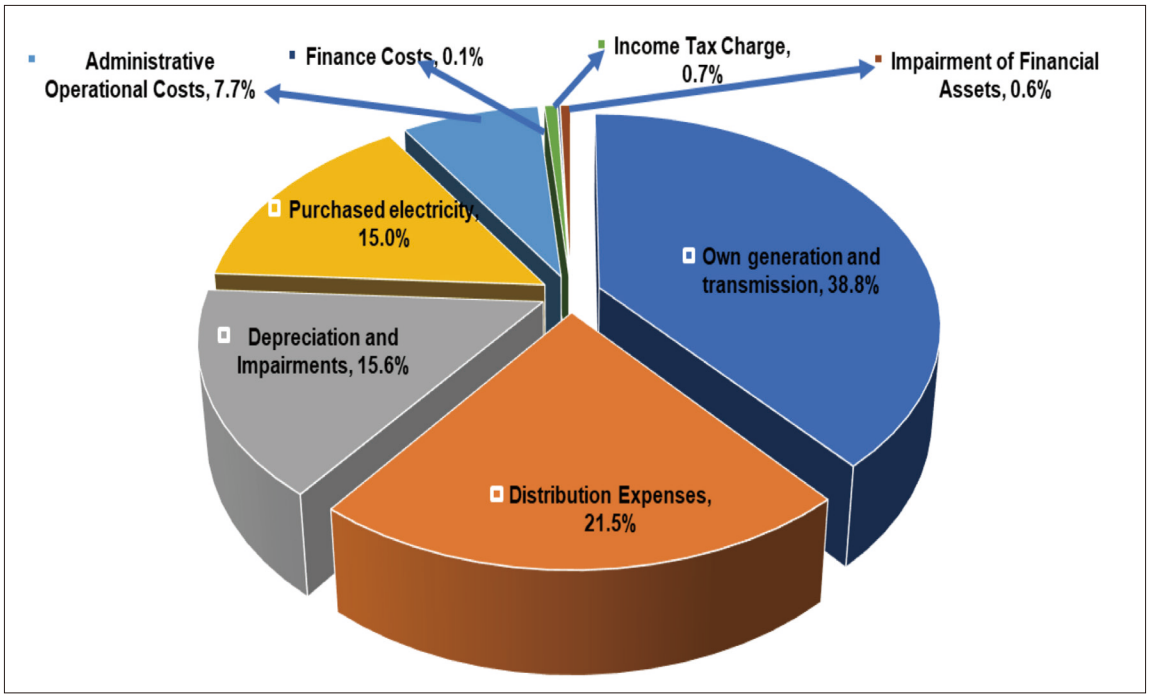


Figure 23: TANESCO's cost structure

During the year under review, overall costs of TANESCO decreased by 0.9% compared to an increase of 0.4% recorded in previous FY. In FY 2022/23, the finance costs and administration costs decreased by 96% and 52%, respectively. The purchase of electricity increased by 53%, distribution expenses by 31% and generation cost by 7%. The reason behind the significant drop of finance costs was conversion of Government debt to equity. **Figure 24** shows the trend of TANESCO's costs.

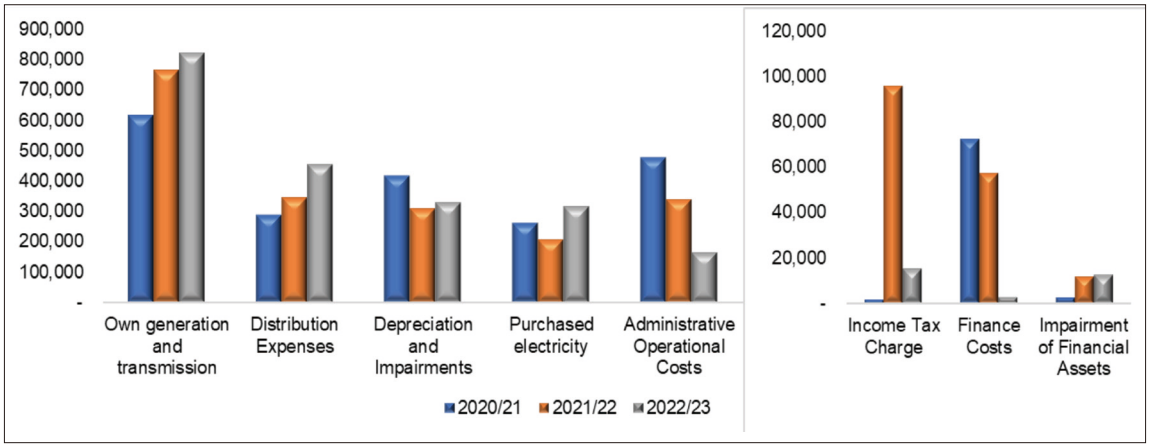


Figure 24: TANESCO's Costs Components Trend

6.1.3 Cost per Unit Sold

Comparing total costs against total units sold, in FY 2022/23, the average unit cost of electricity sold by TANESCO decreased by 6% compared to a decrease of 9% recorded in FY 2021/22. The overall average costs of unit sold reduced from TZS 276/kWh in FY 2021/22 to TZS 258/kWh in FY 2022/23, implying an improvement in operational efficiency. **Figure 25** shows the trend of TANESCO's costs.

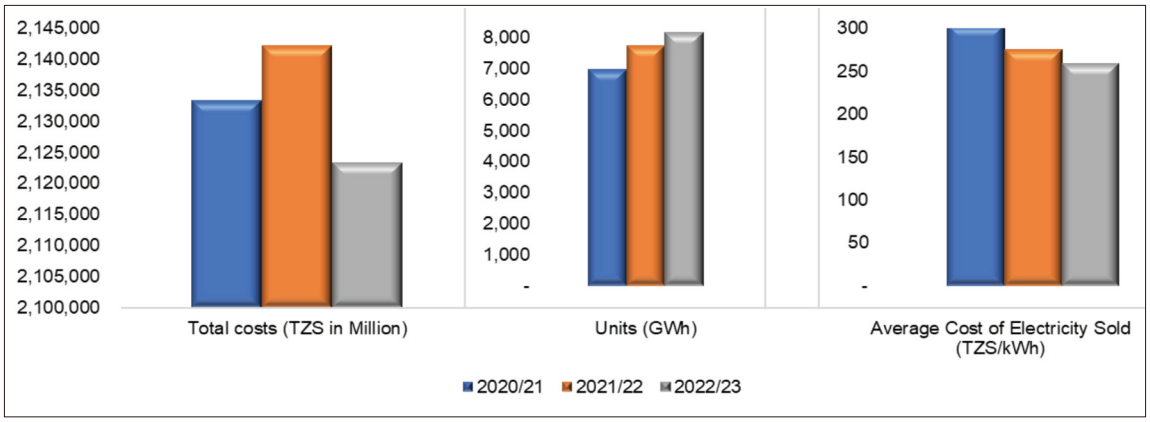


Figure 25: TANESCO's Average Cost

The increase in distribution expenses by 31% is associated with an increase in new connection activities, whereby the number of customers increased by 14%, equivalent to 536,952 new connections. Also, the increase in generation cost by 7% is attributed to an increase in generation activities, whereby units sold increased by 5%. Furthermore, to reduce power deficits in the country, TANESCO imported 50,901,840 kWh from Zambia to feed Rukwa region and 122,875,680 kWh from Uganda to feed Kagera region.

6.1.4 PROFIT ANALYSIS

The objective of profit margin ratio is assessment of utility performance in term of net profit generated from electricity income. The general rule of thumb considers 10% net profit margin as average, 20% margin as good and a 5% margin is low. The profit margin ratio was computed as net profit percentage of sales from electricity. **Table 1** shows a three-year trend of profit margin ratio by utilities.

Table 1: Profit Margin Ratio

Utility	2020/21	2021/22	2022/23
TANESCO	5%	6%	4%
SONGAS	10%	25%	-10%
Mwenga Power	-172%	-110%	-62%
Mwenga Hydro	-6%	14%	-48%

Source: *Licensee's Financial Statement*

In FY 2022/23, TANESCO's profit margin ratio was 4%, which is equivalent to TZS 72.4 billion. In the previous year, the profit margin was 6% or equivalent to TZS 113.9 billion. Songas Tanzania Limited, Mwenga Power Services and Mwenga Hydro Limited recorded negative profit margins. The analysis showed that TANESCO maintained a positive profit margin ratio for three consecutive years. A positive ratio implied profit while a negative ratio implied utilities did not generate profit.

6.1.5 CURRENT RATIO ANALYSIS

The current ratio is a liquidity ratio that measures a company's ability to pay short-term obligations or those due within one year. It tells how a company can maximise the current assets on its balance sheet to satisfy its current debt and other payables. A good current ratio ranges from 1 to 2, which

means that the business has 2 times more current assets than liabilities to cover its debts. A current ratio below 1 means that the company doesn't have enough liquid assets to cover its short-term liabilities. **Figure 8** shows the current ratios trend from FY 2020/21 to 2022/23 by utilities.

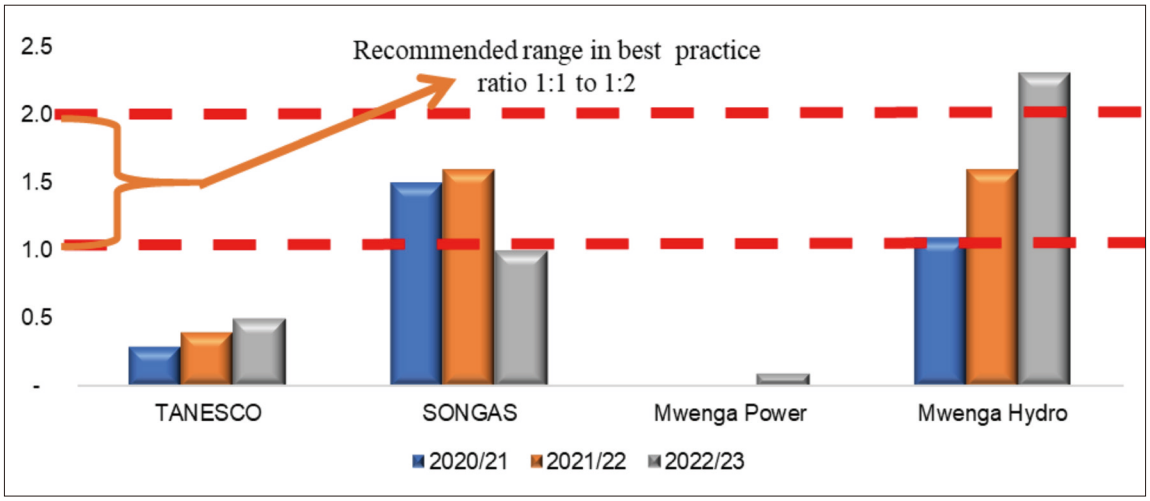


Figure 26: Current Ratio by Utilities

The analysis showed that for three consecutive years, Songas Tanzania Limited recorded a current ratio recommended in best practice, which implied the company was in a better position to meet short-term obligations and efficiently utilised its working capital. In FY 2022/23 Mwenga Hydro Limited recorded excessive current ratio. TANESCO and Mwenga Power Services Limited were unable to pay short-term obligations on time as they recorded a ratio below 1.

7. REGULATORY IMPACT

The following regulatory impacts were noted during the period under review:

1. **Affordability of electricity services**: In promoting affordability of electricity services as one of its functions, EWURA issued 1,605 licences to electrical installation personnel to carry out electrical installation activities, and hence increased the number of licensed personnel to provide electrical installation services, particularly in rural areas by promoting customer service through competition. Furthermore, it increased the safety of people and their property. EWURA, issued five (5) tariff orders for mini-grid operators and continued to enforce the compliance of tariff orders.

2. **Security of electricity supply**: In promoting least-cost investment and the security of electricity supply, three power generation licences were issued by EWURA whose commissioning will compliment Government efforts to ensure security of power supply by adding 16.5MW to the national grid installed capacity. Furthermore, EWURA continued to carry out compliance monitoring to ensure licenced entities operate effectively and efficiently.

3. **Quality and reliability of service**: In promoting quality and reliability of service, EWURA continued to monitor and measure the performance of regulated entities which resulted into; reduction of duration of outages experienced by customers from 26,820 minutes in FY 2021/22 to 1,569 minutes in FY 2022/23, equivalent to 94.15%; and reduction of average outage duration per interruption event experienced by customers in a year from 2,438.18 minutes in FY 2021/22 to 59.30 minutes in FY 2022/23, equivalent to a 97.57% decline.

4. **Sustainability of regulated entities:** In promoting efficient operation and sustainability of regulated entities, EWURA approved tariffs for six (6) mini-grid operators to ensure cost reflective tariffs and hence sustainability of mini-grids. EWURA also continued to enforce compliance for approved tariffs for regulated entities. Furthermore, it continued to monitor and measure the performance of regulated entities to ensure efficient and effective operation of their activities through compliance monitoring.

5. **Electrification:** In promoting electricity access and connectivity, EWURA continued to monitor all regulated entities to ensure timely connection of customers to power supply, which resulted in connection of 536,952 new customers.

6. **Investment:** In promoting least-cost investment in the electricity sub-sector, EWURA continued to monitor implementation of projects of licensed activities which resulted into an increase of 171.03MW of generation installed capacity, 115MVA of transmission sub-station, and 2,929.55km of distribution line. Furthermore, EWURA issued two provisional generation licences which will contribute an additional of 179.79MW upon commissioning. EWURA approved twenty-three (23) Standardized Power Purchase Agreements being implemented by private investors which are expected to contribute 100.51MW upon commissioning.

8. FUTURE OUTLOOK OF THE SUB- SECTOR

Due to ongoing developments in the electricity sub-sector, the following are among the anticipated future outlook of the sub-sector in accordance with the actual situation as well as future projections.

a) **Generation Mix:** the commissioning of ongoing hydropower projects, which include the Julius Nyerere Hydropower Project (2,115MW), Rusumo Hydropower project (26.67MW), and Kinyerezi I Extension (185MW), will increase the installed capacity in the national grid from 1,874.34MW as of 1st July 2023 to 4,013.72MW by 2024. This will transform the power generation mix of the national grid to 2,716.27MW hydro (67.67%), 1,198.82MW natural gas (29.87%), 88.13MW heavy fuel oil (2.20%) and 10.5MW biomass (0.26%). Furthermore, this indicates that the commissioning of the hydropower and natural gas power plants will contribute to increased contribution of hydropower from 32.33% to 67.67% and decrease of natural gas contribution from 62.12% to 29.87%, heavy fuel oil from 4.96% to 2.20% and biomass from 0.59% to 0.26%. In addition, based on the Power System Master Plan 2020, by the year 2044 the power generation mix will consist of hydro (5,684MW or 28.15%), natural gas (6,700MW or 33.18%), coal (5,300MW or 26.24%), wind (800MW or 3.96%), solar (715MW or 3.54%), geothermal (995MW or 4.93%) and diesel/ HFO (0MW or 0%). Achieving this balanced generation mix will require implementation of the envisaged projects as per the timeline stipulated under the PSMP, which requires involvement of both private and public investments through competitive procurement.

b) **Generation Forecast:** the trend shows that there was an increase of 714.44 GWh (7.24%) in energy generated and imported from 9,150.33GWh in 2021/22 to 9,864.77GWh in 2022/23. This is less than what was projected from the Power System Master Plan 2020 of 10,176GWh by 2022. Nevertheless, energy generated is expected to continue increasing as per PSMP 2020 projections which indicate that energy generation of 15,271GWh in 2025, 28,663GWh in 2030, 51,496GWh in 2035, 78,657GWh in 2040, and 107,937GWh by 2044. To achieve the intended generation forecast, private investors should be incentivised to participate in the development of power projects.

c) **Power Demand:** the trend indicates that there was an increase of 129.82MW (9.68%) in maximum demand from 1,340.68MW in 2021/202 to 1,470.50MW in 2022/23. The demand in electricity is expected to continue increasing as per the Power System Master Plan 2020, whereby the demand is expected to grow at an average of 11.7% resulting into a demand of 2,677MW in 2025, 4,878MW in 2030, 8,554MW in 2035, 12,854MW in 2040, and 17,611MW in 2044. To meet that demand, there should be incentives for investments in both grid and off-grid extensions to promote both private and public projects.

d) **Electrification:** the trend indicates that a total of 4,422,955 customers were connected to electricity, being an increase of 557,987 new customers, equivalent to 14.44% from the previous year. In accordance with the Power System Master Plan 2020, electricity connectivity is expected to grow to 36.2% in 2025, 48.5% in 2030, 75.7% in 2035, 86.3% in 2040, and 96.1% in 2044. To achieve that, incentives should be provided to both public and private entities to promote electrification and connection of customers.

e) **System Losses:** the trend indicates that system losses for years 2022/23 was 14.57%, which is a decrease of 0.86% from 15.43% in the previous year. The decrease is attributed to the utility undertaking several initiatives to reduce losses, including construction of new and rehabilitation of existing transmission and distribution infrastructure, as well as conducting operational

campaigns against energy theft. In future, system losses are expected to be 12.3% by 2025 to 12% by 2026 as per the Power System Master plan 2020, provided that investments are done as planned.

f) **Energy Efficiency and Demand Side Management:** To ensure security of power supply to meet the demand in the sector based on the current growth and a need to preserve the environment, there should be a conducive environment that attracts public and private capital investments with regard to energy efficiency and demand side management. Furthermore, there should be a conducive environment and incentives to promote customers to participate in the energy efficiency and demand side management frameworks.

9. ACHIEVEMENTS, CHALLENGES, AND WAY FORWARD

9.1 Achievements

The achievements attained in the electricity sub-sector during the reporting period include the following:

a) Issuance of two (2) operational generation licences contributed an increase of generation capacity by 12.5MW and one (1) provisional generation licence with a potential of increasing generation capacity by 4.00MW;

b) Issuance of 1,605 electrical installation personnel licences and linking Licensing and Order Information and Nikonekt have facilitated increased accessibility to licensed electrical installation personnel;

c) Increase in energy demand by 9.68% contributed by an increase in new customer connections by 14.52%;

d) Increase in capacity of electricity transmission sub-stations by 115MVA; and

e) Increase in electricity distribution infrastructure by 1.81%.

9.2 Challenges

During the reporting period, the electricity sub-sector faced a number of challenges which include the following:

a) Power Reliability - Low power reliability caused by inadequately maintained power infrastructure as compared to the Power quality – Quality of service and reliability standard TZS 1374:2011 established by TBS. EWURA will continue to ensure that utilities comply with best practices and standards in constructing, operating and maintaining infrastructure.

b) Low Private Sector Participation - Private sector investments in the electricity sub-sector continued to be inadequate. To address this, EWURA in collaboration with other stakeholders will continue to promote investments.

9.3 Way Forward

a) Promote diversification of power generation mix to ensure security of power supply.

b) Encourage use of competitive methods for procurement of power projects so as to obtain credible bidders and investors.

c) Promote implementation of the net-metering framework to allow customers with excess electricity from their own generation such as rooftop solar to feed into the grid.

10. CONCLUSION

EWURA, under the guidance of the Government, and in collaboration with other stakeholders will continue to regulate and promote more investments in the electricity sub-sector to meet growing electricity demand.

ANNEXES

Annex 1: Regulatory Tools and Standards

(a) Regulatory Tools

(i). EWURA Act, 2001.
(ii). The Electricity Act, 2008.
(iii). National Energy Policy, 2015.
(iv). The Electricity (System Operations Services) Rules, 2016.
(v). The Electricity (Market Operation Services) Rules, 2016.
(vi). Electricity System Operations Cooperation (Establishment Order), 2016.
(vii). The Electricity (Grid and Distribution Codes) Rules, 2017, GN. 451.
(viii). The Electricity (Net Metering) Rules, 2018, GN. 76.
(ix). Electricity Inspection Manual of March, 2019.
(x). The Electricity (Procurement of Power Projects and Approval of Power Purchase Agreement) Rules 2019, GN. 453.
(xi). The Electricity (Generation, Transmission and Distribution Activities) Rules, 2019, GN. 462.
(xii). The Electricity (Standardized Small Power Projects Tariff) Order 2019, GN. 464.
(xiii). The Electricity (Supply Services) Rules 2019, GN. 387.
(xiv). The Standardized Power Purchase Agreement, 2020.
(xv). The Electricity (General) Regulations 2020 GN 945.
(xvi). The Electricity (Development of Small Power Projects) Rules, 2020, GN. 491.
(xvii). The Energy and Water Utilities Regulatory Authority (Electricity and Natural Gas) (Tariff Application and Rate Setting) Rules, 2021. GN.396.
(xviii). The Energy and Water Utilities Regulatory Authority (Fees and Levies Collection Procedure) Rules, 2021. GN. 420.
(xix). The Electricity (Electrical Installation Services) Rules, 2022, G.N. 113.
(xx). The Electricity (Licensing and Registration Fees) Rules, 2022, G.N.112.
(xxi). Model Power Purchase Agreements for seven technologies (i.e., Hydro, Natural Gas, Oil, Coal, Geothermal, Solar and Wind).

(b) Standards

(i). TZS 1373:2011 – Power Quality - Quality of supply.
(ii). TZS 1374:2011 – Power Quality - Quality of service and reliability.
(iii). Other TBS Standards

Annex 2: Electricity Generation Licences Issued for FY 2022/23

S/N	Name of Lincensee	Project Area	Energy Source	Capacity (MW)	Category	Duration (Years)	Licence Number	Date of Issue	Date of Expiry
1	Suma Hydro Ltd.	Rungwe	Hydro	4	Provisional	3	PEGL-2023-001	18-Feb-2023	17-Feb-2026
2	Bagamoyo Sugar Ltd.	Bagamoyo	Biomass (bagasse)	5	Operating	5	EGOWL-2022-001	9-Sep-2022	8-Sep-2027
3	Maweni Limestone Ltd.	Tanga	Coal	7.5	Operating	5	EGOWL-2022-002	29-Sep-2022	28-Sep-2027
	Total			**16.5**					

Annex 3: Active Licences as of June 2023

(a). Electricity Generation Licence for Sale to the National Grid as of June 2023

S/N	Name of Licensee	Project Area	Energy Source	Capacity (MW)	Capacity for Sale (MW)	Duration (Years)	Licence No.	Date of Issue	Date of Expiry
1	Songas	Ubungo	Natural Gas	189	189	33	-	11-Oct-2001	10-Oct-2034
2	TANESCO	Mainland Tanzania	Hydro, Natural Gas, HFO & Diesel	-	-	20	EGL-2013-001	3-Jan-2013	28-Feb-2033
3	TPC Ltd	Moshi	Biomass	20.00	9.00	13	EGL-2012-006	18-Jun-2012	17-Jun-2025
4	Tanganyika Wattle Company Ltd	Njombe	Biomass	2.75	1.50	13	EGL-2012-005	18-Jun-2012	17-Jun-2025
5	Mwenga Hydro Limited	Mufindi	Hydro	4.00	4.00	15	EGL-2013-001	3-Jan-2013	28-Feb-2028
6	Tulila Hydro Electric Plant Co. Ltd	Songea	Hydro	7.50	5.00	20	EGL-2016-001	8-Mar-2016	8-Feb-2030
7	Andoya Hydro Electric Power Co. Ltd	Mbinga	Hydro	1.00	1.00	15	EGL-2016-002	22-Aug-2016	21-Aug-2031
8	Ngombeni Power Limited	Mafia	Biomass	1.40	1.40	15	EGL-2016-003	9-Jul-2016	9-Jun-1931
9	Luponde Hydro Limited	Njombe	Hydro	1.06	0.90	15	EGL-2020-001	30-Jun-2020	29-Jun-2035
10	Madope Hydro Company Ltd.	Ludewa	Hydro	1.84	1.70	15	EGL-2020-002	30-Jun-2020	29-Jun-2035
11	Mwenga Hydro Limited	Mufindi	Wind	2.40	0	15	EGL-2020-003	29-Dec-2020	28-Dec-2035
12	NextGen Solawazi Ltd.	Kigoma	Solar	5.00	5.00	20	EGL–2021 - 002	31-May-2020	30-May-2041
	Total			**235.31**	**218.5**				

(b). Electricity Generation Licence for Own Use as of June 2023

S/N	Name of Licensee	Project Area	Energy Source	Capacity (MW)	Duration (Years)	Licence No.	Date of Issue	Date of Expiry
1	Ashanti Goldfields T Ltd	Geita	Diesel	31	25	P/G 1134	12-Mar-1999	12-Feb-2024
2	Lake Cement Limited	Kimbiji Village, Temeke	Coal	15.4	15	BEGL-2016-001	29-Mar-2016	28-Mar-2031
3	Tanga Cement Public Limited Co.	Tanga	Diesel	11.48	15	SEGL-2016-001	10-Apr-2016	10-Mar-2031
4	Kilombero Sugar Company Ltd.	Kidatu - Morogoro	Biomass	12.552	15	BEGL-2017-001	18-Apr-2017	17-Apr-2032
5	Kagera Sugar Limited	Misenyi - Kagera	Biomass	6.2	15	BEGL-2017-002	18-Apr-2017	17-Apr-2032
6	Shanta Mine Co. Ltd	Songwe	Diesel	8.2	15	BEGL-2018-001	2-Feb-2018	2-Jan-2033
7	Kilombero Plantations Limited	Morogoro	Biomass	1.692	15	EGL-2018-001	30/2/2018	29-Aug-2033
8	Geita Gold Mining Limited	Geita	Diesel	40	25	BEGL-2018-002	12-Mar-1999	12-Feb-2024
9	Tanzania Cigarette Public Ltd. Co.	Dar es Salaam	Natural Gas	3.8	5	BEGL-2019-001	22-Mar-2019	21-Mar-2024
10	Stamigold Co. Ltd.	Biharamulo	Diesel	7	15	BEGL-2019-002	22-Mar-2019	21-Mar-2034
11	Dangote Cement Ltd.	Mtwara	Natural Gas	45	5	BEGL-2019-003	30-Mar-2019	29-Apr-2024
12	ALAF Ltd.	Dar es Salaam	Natural Gas	4	5	BEGL-2020-001	30-Jan-2020	29-Jan-2025
13	North Mara Goldmine Ltd	Tarime	Heavy Fuel Oil	18	5	EGOWL-2020-001	27-Nov-2020	26-Nov-2025
14	Bulyanhulu Goldmine Ltd	Kahama	Heavy Fuel Oil	39.1	5	EGOWL-2020-002	27-Nov-2020	26-Nov-2025
15	Dangote Cement Limited	Mtwara	Natural Gas	50	5	EGOWL-2021-001	28-Jun-2020	27-Jun-2026
16	Maweni Limestone Ltd.	Tanga	Coal	7.5	5	EGOWL-2022-002	29-Sep-2022	28-Sep-2027
17	Bagamoyo Sugar Ltd.	Bagamoyo	Biomass	5	5	EGOWL-2022-001	9-Sep-2022	8-Sep-2027
18	Kagera Sugar Ltd.	Kagera	Diesel, Biomass	27.5	15	EGOWL-2022-003	18-Apr-2017	17-Apr-2032
	Total			**333.424**				

(c). Electricity Transmission Licence as of June 2023

S/N	Name of Licensee	Project Area	Capacity (km)	Duration (Years)	Licence Number	Date of Issue	Date of Expiry
1	TANESCO	Mainland Tanzania	6,110.28	20	ETL-2021-001	1-Mar-2013	28-Feb-2033

(d). Electricity Cross-Boarder Trade Licence as of June 2023

S/N	Name of Licensee	Project Area	Duration (Years)	Licence Number	Date of Issue	Date of Expiry
1	TANESCO	Mainland Tanzania	20	ECBTL-2021-001	1-Mar-2013	28-Feb-1933

(e). Electricity Distribution Licences as of June 2023

S/N	Name of Licensee	Project Area	Length (km)	Customers	Duration (Years)	Licence Number	Date of Issue	Date of Expiry
1	TANESCO	Mainland Tanzania	163,296.06	4,400,070	20	ESL-2013-001	1-Mar-2013	28-Feb-2033
2	Mwenga Power Services Ltd.	Mufindi & Njombe	495.10	5,636	15	EDL-2013-005	30-Apr-2013	29-Apr-2028
	Total		**163,791.16**					

(f). Electricity Supply Licence as of June 2023

S/N	Name of Licensee	Project Area	Customers	Duration (Years)	Licence Number	Date of Issue	Date of Expiry
1	TANESCO	Mainland Tanzania	4,400,070	20	ESL-2021-001	1-Mar-2013	28-Feb-1933

(g). Provisional Electricity Generation Licenses as of June 2023

S/N	Licensee	Project Area	Energy Source	Capacity (MW)	Duration (Years)	Licence Number	Date of Issue	Date of Expiry
1	SSI Energy (T) Limited	Kahama	Solar	10	3	PEGL-2022-001	29 April 2022	28 April 2025
2	Suma Hydro Limited	Rungwe	Hydro	4	3	PEGL-2023-001	18 February 2023	17 February 2026

Annex 4: Total Registered Entities Selling Electricity as of June 2023

No.	Project Area Mini Grid	Generation Capacity (KW)	Registration No.	Duration (Years)	Date of Issue	Date of Expiry	Customers served	Line Length (km)	
								0.23/0.4kV	11/33kV
A.	**Darakuta Hydropower Development Co. Limited (generating using hydro, located in the main-grid & sales to TANESCO)**								
	Magugu – Babati District, Manyara Region	450	NA	10	03-Jul-13	02-Jul-23	1	0	0
	Sub-Total	**450**					**1**	**0**	**0**
B.	**Yovi Hydropower Company Limited (generating using hydro, located in the main-grid & sales to TANESCO)**								
1.	Msolwa - Kilosa District, Morogoro Region	995	CRG - 2019 - 009	10	16-Apr-19	15-Apr-29	1	0	0
	Sub-Total	**995**					**1**	**0**	**0**
C.	**PowerCorner Tanzania Limited (generating and distributing using solar, located in the off-grid & sales to customers)**								
1	Orkejuloongishu Village, Ketumbeine Ward, Longido District,	15.6	CRG-2016-001 & CRD-2016-001	10	6 October 2016	5 October 2026	81	2	0
2	Mbaya Village, Liwale District, Lindi Region	30	CRG-2018-005 & CRD-2018-005	10	31 October 2018	30 October 2028	270	13.3	0
3	Nakopi Village, Nanyumbu District, Lindi Region	30	CRG-2018-006 & CRD-2018-006	10	31 October 2018	30 October 2028	250	9.8	0
4	Barikiwa Village, Liwale District, Lindi Region	30	CRG-2018-007 & CRD-2018-007	10	31 October 2018	30 October 2028	272	16.5	0
5	Mwenge Village, Sikonge District, Tabora Region	28	CRG-2019-014 & CRD-2019-014	10	1 July 2019	30 June 2029	362	16.9	0
6	Mgambo Village, Sikonge District, Tabora Region	20	CRG-2019-015 & CRD-2019-015	10	1 July 2019	30 June 2029	222	9.7	0
7	Kiegei Village, Nachingwea District, Lindi Region	16	CRG-2019-016 & CRD-2019-016	10	18 December 2019	17 December 2029	256	12.8	0
8	Matekwe Village, Nachingwea District, Lindi Region	12	CRG-2019-017 & CRD-2019-017	10	18 December 2019	17 December 2029	161	9.8	0
9	Lukumbule Village, Nachingwea District, Lindi Region	40.5	CRG-2019-018 & CRD-2019-018	10	18 December 2019	17 December 2029	257	16.3	0
10	Kagerankanda Village, Kasulu District, Kigoma Region	44	CRG-2019-019 & CRD-2019-019	10	18 December 2019	17 December 2029	442	17.6	0
11	Kalya Village, Uvinza District, Kigoma Region	28	CRG-2019-020 & CRD-2019-020	10	18 December 2019	17 December 2029	314	19.7	0
12	Hololа Village, Nanyumbu District, Mtwara	16	CRG-2019-021 & CRD-2019-021	10	27 December 2019	26 December 2029	126	7.6	0
	Sub-Total	**310.1**					**3,013**	**152.00**	**0**

D.	**Watu na Umeme Limited (generating and distributing using solar, located in the off-grid & sales to customers)**								
1	Mpale, Korogwe District, Tanga Region	48	CRG-2018-001& CRD-2018-001	10	23 April 2018	22 April 2028	256	7.75	0
	Sub-Total	**48**					**256**	**7.75**	**0**
G.	**Power Gen Renewable Energy Limited (generating and distributing using solar, located in the off-grid & sales to customers)**								
1	London Village, Manyoni District, Singida Region.	16	CRG-2018-003 & CRD-2018-003	10	20 August 2018	19 August 2028	210	13	0
2	Ighombwe Village, Ikungi District, Singida Region.	3	CRG-2018-004 & CRD-2018-004	10	20 August 2018	19 August 2028	50	7.1	0
3	Bugalama Village, Ngara District, Kagera Region.	3.18	CRG-2019-001 & CRD-2019-001	10	11 January 2019	10 January 2029	52	2.4	0
4	Murusagamba Village, Ngara District, Kagera Region.	17.16	CRG-2019-002 & CRD-2019-002	10	11 January 2019	10 January 2029	177	8.8	0
5	Kalenge Village, Biharamulo District, Kagera Region.	16.18	CRG-2019-003 & CRD-2019-003	10	11 January 2019	10 January 2029	178	11.4	0
6	Nyantakara Village, Biharamulo District, Kagera Region.	17.18	CRG-2019-004 & CRD-2019-004	10	11 January 2019	10 January 2029	95	7	0
7	Mavota Village, Biharamulo District, Kagera Region.	17.18	CRG-2019-005 & CRD-2019-005	10	11 January 2019	10 January 2029	134	8.1	0
8	Nemba Village, Biharamulo District, Kagera Region.	23.52	CRG-2019-006 & CRD-2019-006	10	11 January 2019	10 January 2029	182	0	0
9	Leshata Village, Gairo District, Morogoro Region.	15.36	CRG-2019-007 & CRD-2019-007	10	28 March 2019	27 March 2029	145	7.5	0
10	Kitaita & Songambele Village, Gairo District, Morogoro Region.	15.36	CRG-2019-008 & CRD-2019-008	10	28 March 2019	27 March 2029	103	3.9	0
11	Itabagumba Village, Ziragula Island, Buchosa District, Mwanza Region	30.32	CRG-2019-010 & CRD-2019-010	10	1 July 2019	30 June 2029	218	9.3	0
12	Busenge Village, Yozu Island, Buchosa District, Mwanza Region	28.68	CRG-2019-011 & CRD-2019-011	10	1 July 2019	30 June 2029	181	10.1	0
13	Kanyara Village, Kasalazi island, Buchosa District, Mwanza Region	30.32	CRG-2019-012 & CRD-2019-012	10	1 July 2019	30 June 2029	251	12.2	0
14	Iglansoni Village, Ikungi District, Mwanza Region	23.96	CRG-2019-013 & CRD-2019-013	10	1 July 2019	30 June 2029	201	12.1	0
15	Lyegoba Island, Ukerewe District, Mwanza Region	30.32	CRG-2020-013 & CRD-2020-013	10	7 December 2020	6 December 1930	180	2.91	0
16	Bezi Island, Ilemela District, Mwanza Region	42.6	CRG-2020-014 & CRD-2020-014	10	7 December 2020	6 December 1930	340	3.59	0
17	Juma Island, Sengerema District, Mwanza Region	42.6	CRG-2020-015 & CRD-2020-015	10	7 December 2020	6 December 1930	180	7.64	0
18	Chembaya Island, Buchosa District, Mwanza Region	29.8	CRG-2020-016 & CRD-2020-016	10	7 December 2020	6 December 1930	155	2.55	0
19	Sozia Island, Bunda District, Mara Region	29.8	CRG-2020-017 & CRD-2020-017	10	7 December 2020	6 December 1930	130	15.1	0
20	Raranya Village, Rorya District, Mara region	6.36	CRG-2020-018 & CRD-2020-018	10	7 December 2020	6 December 1930	65	5.5	0
	Sub-Total	**438.88**					**3,227**	**150.19**	**0**

H.	Jumeme Rural Power Supply Ltd (generating and distributing using solar, located in the off-grid & sales to customers)								
1	Bwisya - Ukara Island	90		10	8 April 2016	7 April 2026	682	16.096	5.798
2	Kibumba village, Muleba District	10	CRG-2020-001 & CRD-2020-001	10	14 May 2020	13 May 2030	70	1.572	0
3	Kasenyi village, Muleba District	20	CRG-2020-002 & CRD-2020-002	10	14 May 2020	13 May 2030	334	3.022	0
4	Nabweko village, Ukerewe District	100	CRG-2020-003 & CRD-2020-003	10	14 May 2020	13 May 2030	557	25.388	3.276
5	Kerebe village, Muleba District	35	CRG-2020-004 & CRD-2020-004	10	14 May 2020	13 May 2030	279	2.503	0
6	Goziba village, Muleba District	45	CRG-2020-005 & CRD-2020-005	10	14 May 2020	13 May 2030	379	3.635	0
7	Lukuba village, Musoma District	10	CRG-2020-006 & CRD-2020-006	10	14 May 2020	13 May 2030	155	4.732	0
8	Kanoni village, Buchosa District	100	CRG-2020-007 & CRD-2020-007	10	14 May 2020	13 May 2030	666	18.457	7.05
9	Bunyozi village, Muleba District	45	CRG-2020-008 & CRD-2020-008	10	14 May 2020	13 May 2030	417	7.004	0
10	Mahaiga village, Muleba District	20	CRG-2020-009 & CRD-2020-009	10	14 May 2020	13 May 2030	210	1.418	0
11	Bukiko village, Ukerewe District	100	CRG-2020-010 & CRD-2020-010	10	14 May 2020	13 May 2030	708	20.836	7.61
12	Chifule village, Ukerewe District	100	CRG-2020-011 & CRD-2020-011	10	14 May 2020	13 May 2030	544	18.538	5.49
13	Herembe village, Uvinza District	56	CRG-2021-001 & CRD-2021-001	10	1 June 2021	31 May 2031	323	8.56	0.87
14	Igalula village, Uvinza District	56	CRG-2021-002 & CRD-2021-002	10	1 June 2021	31 May 2031	712	10.18	2.17
15	Kashagulu village, Uvinza District	102	CRG-2021-003 & CRD-2021-003	10	1 June 2021	31 May 2031	831	9.3	0
16	Katumbi village, Uvinza District	20	CRG-2021-004 & CRD-2021-004	10	1 June 2021	31 May 2031	367	4.06	0
17	Lubengela village, Uvinza District	20	CRG-2021-005 & CRD-2021-005	10	1 June 2021	31 May 2031	337	3.73	0
18	Mgambo village, Uvinza District	72	CRG-2021-006 & CRD-2021-006	10	1 June 2021	31 May 2031	513	8.27	1.67
19	Nkona village, Uvinza District	36	CRG-2021-007 & CRD-2021-007	10	1 June 2021	31 May 2031	280	5.45	0
20	Rukoma village, Uvinza District	46	CRG-2021-008 & CRD-2021-008	10	1 June 2021	31 May 2031	641	13.14	0
21	Sibwesa village, Uvinza District	92	CRG-2021-009 & CRD-2021-009	10	1 June 2021	31 May 2031	682	8.71	0
22	Sigunga village, Uvinza District	56	CRG-2021-010 & CRD-2021-010	10	1 June 2021	31 May 2031	773	13.83	4.75
	Sub-Total	**1231**					**10,460**	**208.431**	**38.684**
	Total	**3,472.98**					**16,958**	**518.371**	**38.684**

GENERAL SUMMARY FOR ALL COMPANIES						
A	**Generation Capacity (kW)**	**2020/21**	**2021/22**	**2022/23**	**%±**	**Description**
1	Total VSPP (kW)_Hydro + Solar	3,620.51	3,620.51	3472.98	23%	All registered Entities
2	Total_VSPP_solar_Main Grid	0	0	0	0%	No registered Entity in this category
3	Total_VSPP_Solar_Off Grid	2,175.50	2,175.50	2027.98	33%	PowerCorner (310.10kW) + Watu na Umeme (48.00kW) + Powergen (438.88kW) + Jumeme (1,231.00kW).
4	Total_VSPP_Hydro_Main Grid	1,315.00	1,315.00	1445	0%	Darakuta (450kW) +Yovi (995kW)
5	Total_VSPP_Hydro_Off Grid	0	0	0	0%	No registered Entity in this category
6	Total_VSPP_Main-Grid (2+4)	1,315.00	1,315.00	1445	0%	Darakuta (450kW) +Yovi (995kW)
7	Total_VSPP_Off-Grid (3+5)	2,175.50	2,175.50	2027.98	33%	PowerCorner (310.10kW) + Watu na Umeme (48.00kW) + Powergen (438.88kW) + Jumeme (1,231.00kW).
B	**Number of Customers**	**2020/21**	**2021/22**	**2022/23**	**%±**	
8	Total VSPP _Hydro + Solar	16,661	16,661	16958	34%	All registered Entities
9	Total_VSPP_solar_Main Grid	0	0	0	0%	No registered Entity in this category
10	Total_VSPP_Solar_Off Grid	16,661	16,661	16956	91%	PowerCorner (3,013) + Watu na Umeme (256) + Powergen (3,227) + Jumeme (10,460).
11	Total_VSPP_Hydro_Main Grid	2	2	2	0%	Darakuta (1) +Yovi (1) – all sale to TANESCO
12	Total_VSPP_Hydro_Off Grid	0	0	0	0%	No registered Entity in this category
13	Total_VSPP_Main-Grid (9+11)	2	2	2	0%	Darakuta (1) +Yovi (1) – all sale to TANESCO
14	Total_VSPP off-Grid (10+12)	16,659	16,659	16956	34%	PowerCorner (3,013) + Watu na Umeme (256) + Powergen (3,227) + Jumeme (10,460).
C	**Infrastructure Line length (km)**	**2020/21**	**2021/22**	**2022/23**		
15	Total VSPP _Hydro + Solar	544.91	544.91	557.055	34%	All registered Entities
16	Total_VSPP_solar_Main Grid	0	0	0	0%	No registered Entity in this category
17	Total_VSPP_Solar_Off Grid	544.91	544.91	557.055	91%	PowerCorner (152) + Watu na Umeme (7.75) + Powergen (150) + Jumeme (247.115)
18	Total_VSPP_Hydro_Main Grid	0	0	0	0%	Darakuta (0) +Yovi (0) – all are doing generation activities only. No distribution activities.
19	Total_VSPP_Hydro_Off Grid	0	0	0	0%	No registered Entity in this category
20	Total_VSPP_Main-Grid	0	0	0	0%	Darakuta (0) +Yovi (0) – all are doing generation activities only. No distribution activities.
21	Total_VSPP off-Grid	544.91	544.91	557.055	34%	PowerCorner (152) + Watu na Umeme (7.75) + Powergen (150) + Jumeme (247.115).

Annex 5: Published tariffs for Very Small Power Producers (VSPP)

S/N	Description	Technology	Customer Category	Period	Unit	Approved Tariff			Effective Date
						2022	2023	2024	
1	The Electricity Powercorner Tanzania Limited ("Powercorner") (Tariff) Order, 2022	Solar	Small	Anytime	TZS/kWh	1,140	1,200	1,100	26 Aug 2022
			Medium		TZS/kWh	1,080	1,140	1,050	
			Large		TZS/kWh	940	990	910	
			Productive use		TZS/kWh	920	1,040	1,020	
2	The Electricity PowerGen Renewable Energy Limited ("PowerGen") (Tariff) Order, 2022	Solar	Residential	Anytime	TZS/kWh	1,500	1,500	1,500	26 Aug 2022
			Business		TZS/kWh	1,500	1,500	1,500	
			Productive Use		TZS/kWh	1,300	1,300	1,300	
			Public Institution		TZS/kWh	1,200	1,200	1,200	
3	Electricity (Watu na Umeme Tanzania Limited) (Watu na Umeme) (Tariff Adjustment for Electricity Service) Order, 2022	Solar	Basic Household	Anytime	TZS/kWh	1,306	1,306	1,306	18 Nov 2022
			Medium Household		TZS/kWh	1,086	1,086	1,086	
			Small Business/Public Institutions		TZS/kWh	941	941	941	
			Productive user		TZS/kWh	801	801	801	
4	The Electricity Jumeme Rural Power Supply ("Jumeme") (Tariff) Order, 2022	Solar	Residential Users	Day	TZS/kWh	1,470	1,690	1,710	26 Aug 2022
				Night	TZS/kWh	1,470	1,690	1,710	
			Commercial Users	Day	TZS/kWh	1,340	1,540	1,560	
				Night	TZS/kWh	1,440	1,650	1,670	
			Productive Users	Day	TZS/kWh	1,130	1,300	1,310	
				Night	TZS/kWh	1,350	1,550	1,570	
5	The Electricity (Husk Power System Limited) (Husk Power) (Tariff Adjustment for Electricity Service) Order, 2022	Solar	Basic Residential	Day	TZS/kWh	1,300	1,300	1,300	18 Nov 2022
				Night	TZS/kWh	1,300	1,300	1,300	
			Commercial	Day	TZS/kWh	1,300	1,300	1,300	
				Night	TZS/kWh	1,300	1,300	1,300	

Annex 6: The Electricity Standardized Small Power Projects Tariff

Note: *It was published on 21st June 2019, GN 464*

a) Tariff for SPPs Selling Electricity to the Grid Based on Specific Technology

Capacity	Minihydro	Wind	Solar	Biomass	Bagasse
	USc[7]/kWh	USc/kWh	USc/kWh	USc/kWh	USc/kWh
0.1 - 0.5MW	10.65	10.82	10.54	10.15	9.71
0.51 - 1 MW	9.90	9.95	9.84	9.34	9.09
1.01 - 5MW	8.95	9.42	9.24	8.64	8.56
5.01 - 10MW	7.83	8.88	8.34	7.60	7.55

b) Tariffs for Main Grid Connection under the First Generation SPP Framework (Avoided Cost).

Description		Approved Tariff effective 1st May 2019 (TZS/kWh)
Standardized Small Power Purchase Tariff		203.11
Seasonally adjusted Standardized SPPT Payable in	Dry season	243.73
	Wet season	182.80

Annex 7: Tanzania Electric Supply Company Limited (TANESCO) Tariffs

Note: *It commenced on 1st April 2016*

a) Approved TANESCO Tariffs

Customer Category	Component	Unit	Approved Tariff
D1	Service charge	TZS/Month	0
	Energy charge (0-75kWh)	TZS/kWh	100
	Energy charge above 75kWh	TZS/kWh	350
T1	Service charge /month	TZS/Month	0
	Energy charge	TZS/kWh	292
	Maximum Demand charge	TZS/kVA/Month	0
T2	Service charge	TZS/Month	14,233
	Energy charge	TZS/kWh	195
	Maximum Demand Charge	TZS/kVA/Month	15,004
T3-MV	Service charge	TZS/Month	16,769
	Energy charge	TZS/kWh	157
	Maximum Demand Charge	TZS/kVA/Month	13,200
T3-HV	Service charge	TZS/Month	0
	Energy charge	TZS/kWh	152
	Maximum Demand Charge	TZS/kVA/Month	16,550
Key			
D1: Low usage tariff for domestic customers who on average consume les than 75kWh per month. Any unit exceeding 75kWh is charged a high rate of TZS 350 per kWh. Under this category, power is supplied at a low voltage single phase (230V).			
T1: General usage tariff for customers including residential, small commercial and light industrial use, public lighting and billboards. Power is supplied at low voltage single phase (230V) as well as three phase (400V).			

7 The prevailing exchange rate to be used

T2: Applicable to general use customers where power is metered at 400V and average consumption is more than 7,500kWh per meter reading period and demand does not exceed 500kVA per meter reading period.
T3-MV: Applicable to customers connected to medium voltage
T3-HV: Applicable to customers connected to high voltage, including ZECO, Bulyanhulu and Twiga cement.

b) Approved TANESCO Charges

i.Single Phase Charges

Service line	Approved Connection Charge (TZS)	
	Urban rate (VAT exclusive)	Rural rate (VAT inclusive)
Within 30 Metres	272,000	27,000
Within 70 Metres (one pole)	436,964	27,000
Within 120 Metres (two poles)	590,398	27,000

ii.Three-Phase Charges for Urban and Rural Area

Service line	Meter Type	Approved Connection Charge (TZS)	
		Urban rate (VAT exclusive)	Rural rate (VAT exclusive)
Within 30 Metres (Cable 16mm^2)	LUKU	772,893	772,893
Within 30 Metres (Cable 16mm^2)	AMR		
Within 30 Metres (Cable 35mm^2)	LUKU		
Within 30 Metres (Cable 35mm^2)	AMR		
Within 70 Metres (one pole)	LUKU	1,058,801	1,058,801
Within 70 Metres (one pole)	AMR		
Within 120 Metres (two poles)	LUKU	1,389,115	1,389,115
Within 120 Metres (two poles)	AMR		

iii.Service line application fee

Tariff category	Approved Fee (TZS)
All customers	Nil

iv.Charges for Installation of Meters in Case of Damage Due to Meter Tempering/Broken

Customer category	Description	Approved Charges TZS (VAT exclusive)
D1&T1	LUKU (Single Phase	60,000
	LUKU (Three Phase)	200,000
	AMR (Three Phase)	300,000
T2	CT – Operated Meters	1,200,000
T3	CT/CV- Operated Meters	1,200,000

v.Testing and Inspection of Installation Fee

Customer category	Approved charges in TZS (VAT exclusive)
D1	20,000
T1	20,000
T2	30,000
T3	50,000

vi.Temporary power supply charges

Customer Category	Description	Approved Charges in TZS (VAT exclusive)
T2	Connection Fee	Full cost plus 10%
T3		Full cost plus 10%
T2	Meter Deposit	200,000
T3		500,000

vii.Energy Deposit for Post-Paid Meters

Customer category	Description	Approved Charges in TZS (VAT exclusive)
D1	Single Phase	30,000
T1	Single Phase	30,000
T1	Three Phase	150,000
T2	Three Phase	200,000
T3	Three Phase	500,000

Annex 8: Mwenga Hydro Limited Tariff

a) Approved Tariffs

Customer Category		Component	Approved Rates
D1		Basic Charge	0.00
	Domestic Low Usage	Energy Charge (0-50kWh/ Month)	60.00
	High-Cost Unit Penalty – High Usage	Energy Charge (50+ kWh/ Month	273.04
T1	All other customers inclusive of domestic users averaging more than 50 kWh/Month	Energy Charge (inclusive of average fixed monthly service fee component)	234.04

Source: EWURA

b) Approved Service Line Connection Charges

Description	After the First 2600 Connections (TZS)	The First 2600 connections (subsidized) (TZS)
Application fees	5,000	5,000
(a) Overhead Service Line - Single Phase (30m)		
D1 with LUKU meter	385,682	180,000
T1 with LUKU meter	385,682	180,000
(b) Overhead Service Line - Three Phase (30m)		
T1 with LUKU meter (16mm2 cable)	772,893	380,000
T1 with LUKU meter (36mm2 cable)	913,202	450,000
(c) Single Phase 70m Route		
Single phase 70m route length - including 1 pole (LUKU)	1,145,664	850,000
(d) Three-Phase 70m Route		
Three-phase 70m route length - including 1 pole (LUKU)	1,799,062	1,300,000

Source: *EWURA*

Annex 9: Installed Capacity

(A) GRID AND OFF-GRID INSTALLED CAPACITY BY POWER PLANT

Part I: Main Grid Power Plants	No. of Units	Energy Source	Installed Capacity (MW)
(a) Power Plant Owned by TANESCO			
Hydro Power Plants			
1. Kidatu	4	Hydro	204
2. Kihansi	3	Hydro	180
3. Mtera	2	Hydro	80
4. New Pangani Falls	2	Hydro	68
5. Hale	2	Hydro	21
6. Nyumba ya Mungu	2	Hydro	8
7. Uwemba	3	Hydro	0.84
Sub-Total Hydro			***561.84***
Natural Gas			
1. Ubungo I	12	Natural Gas	102
2. Ubungo II	3	Natural Gas	129
3. Ubungo III	5	Natural Gas	112.5
4. Tegeta	5	Natural Gas	45
5. Kinyerezi I	4	Natural Gas	150
6. Kinyerezi I Ext	4	Natural Gas	185
7. Kinyerezi II	6	Natural Gas	248.22
8. Mtwara	9	Natural Gas	30.6
9. Somanga	3	Natural Gas	7.5
Sub-Total Natural Gas			***1,009.82***
Liquid Fuels			
1. Zuzu	3	HFO	7.4
2. Nyakato	10	HFO	63
3. Biharamulo	5	GO	1.79
4. Songea	6	GO	5.6
5. Ludewa	3	GO	1.27
6. Mbinga	1	GO	1.000
7. Madaba	1	GO	0.48
5. Kasulu	3	GO	3.75
6. Kibondo	2	GO	2.5
7. Loliondo	2	GO	2.25
8. Ngara	2	GO	1.25
Sub-Total HFO/GO			***90.29***
Sub-Total Main Grid Power Plants Owned by TANESCO			***1,661.95***
(b) Power Plant owned by Independent Power Producer (IPP)			
1. Songas	6	Natural Gas	189
Sub-Total Main Grid Power Plant owned by IPP			***189***
(c) Small Power Producers (SPP) owned by Private Entities			
1. TANWAT	1	Biomass	1.5
2. TPC	1	Biomass	9

3. Mwenga Hydro Limited	1	Hydro	4
4. Andoya	1	Hydro	1
5. Tulila	2	Hydro	5
6. Yovi	1	Hydro	0.95
7. Darakuta	1	Hydro	0.45
8. Matembwe	1	Hydro	0.59
9. Luponde	1	Hydro	0.9
Sub-Total Main Grid Small Power Producers (SPP)			**23.39**
Total Main Grid Installed Capacity			***1,874.34***
Part II: Off-Grid Power Plants			
(a) Off-Grid Power Plants owned by TANESCO			
1. Kigoma	7	GO	8.75
2. Mpanda	5	GO	6.25
3. Mafia	5	GO	3.2
4. Sumbawanga	4	GO	5
8. Inyonga	3	GO	1.932
9. Bukoba	4	GO	2.56
Sub-Total Off-Grid Power Plants owned by TANESCO			**27.692**
(b) **Power Plants owned by Small Power Producers (SPP)**			
1. Mwenga Hydro Limited	3	Wind	2.4
2. NextGen Solawazi	16,160	Solar	5
Sub-Total Off-Grid Power Plants owned by SPP			**7.4**
(c) Sub-Total Off-Grid Power Plants owned by Private Entities - Refer Annex 5			**2.03**
Total Off-Grid Installed Capacity			**37.122**
National System Total (Main Grid and Off-Grid)			**1,911.46**

Source: *Daily Operation Report from TANESCO and EWURA Licensee Data Base*

(B) GRID AND OFF-GRID INSTALLED CAPACITY BY TECHNOLOGY

S/N	Power Plant Name	Location	Installed Capacity (MW)	Energy Source
1	Kidatu	Morogoro	204.00	Hydro
2	Kihansi	Morogoro	180.00	Hydro
3	Mtera	Iringa	80.00	Hydro
4	N/P Falls	Tanga	68.00	Hydro
5	Hale	Tanga	21.00	Hydro
6	Nyumba ya Mungu	Kilimanjaro	8.00	Hydro
7	Uwemba	Njombe	0.84	Hydro
8	Mwenga	Njombe	4.00	Hydro
9	Matembwe	Njombe	0.59	Hydro
10	Yovi	Morogoro	0.95	Hydro
11	Andoya	Ruvuma	1.00	Hydro
12	Tulila	Ruvuma	5.00	Hydro
13	Darakuta	Manyara	0.32	Hydro
14	Luponde	Njombe	0.90	Hydro
15	Songas	Dar es Salaam	189.00	Natural Gas
16	Ubungo I	Dar es Salaam	102.00	Natural Gas

S/N	Power Plant Name	Location	Installed Capacity (MW)	Energy Source
17	Ubungo II	Dar es Salaam	129.00	Natural Gas
18	Ubungo III	Dar es Salaam	120.00	Natural Gas
19	Tegeta	Dar es Salaam	45.00	Natural Gas
20	Kinyerezi I	Dar es Salaam	150.00	Natural Gas
21	Kinyerezi II	Dar es Salaam	248.22	Natural Gas
22	Mtwara	Mtwara	30.60	Natural Gas
23	Somanga	Lindi	7.50	Natural Gas
24	Liwale	Lindi	0.85	Diesel
25	Zuzu	Dodoma	7.40	Diesel
26	Nyakato	Mwanza	63.00	Diesel
27	Bihalamulo	Kagera	4.14	Diesel
28	Songea	Ruvuma	5.77	Diesel
29	Tunduru	Ruvuma	1.72	Diesel
30	Mbinga	Ruvuma	1.00	Diesel
31	Madaba	Ruvuma	0.48	Diesel
32	Ludewa	Njombe	1.27	Diesel
33	Ngara	Kagera	2.50	Diesel
34	Kigoma	Kigoma	6.25	Diesel
35	Mpanda	Katavi	5.05	Diesel
36	Mafia	Coast	3.20	Diesel
37	Sumbawanga	Rukwa	6.25	Diesel
38	Kasulu	Kigoma	2.50	Diesel
39	Kibondo	Kigoma	2.50	Diesel
40	Loliondo	Manyara	3.50	Diesel
41	Inyonga	Njombe	0.82	Diesel
42	Bukoba	Kagera	2.56	Diesel
43	PowerCorner	Manyara, Lindi, Mtwara, Tabora	0.31	Solar
44	E.O. N	Dodoma	0.03	Solar
45	Ruaha Energy	Morogoro	0.13	Solar
46	Watu na Umeme	Tanga	0.05	Solar
47	PowerGen	Singida, Kagera, Morogoro, Mwanza, Mara	0.44	Solar
48	Jumeme	Mwanza and Kagera	1.23	Solar

Annex 10: Power Plants Operation Performance Data

(a). Main Grid Power Plants Utilisation for FY 2022/23

Plant's Name	Energy Source	Installed Capacity (MW)	Units to be Generated (kWh)	Units Generated (kWh)	Plant Utilisation (%)
Part A: Hydro Power Plants					
Kidatu	Hydro	204	1,787,040,000	1,208,393,550	67.62%
Kihansi	Hydro	180	1,576,800,000	600,556,749	38.09%
Mtera	Hydro	80	700,800,000	520,828,000	74.32%
Hale	Hydro	21	183,960,000	27,719,993	15.07%
New Pangani Falls	Hydro	68	595,680,000	146,755,460	24.64%
Nyumba ya Mungu	Hydro	8	70,080,000	19,729,720	28.15%
Hydro Plant Utilisation		**561**	**4,914,360,000**	**2,523,983,472**	**51.36%**
Part B: Natural Gas Power Plants					
Songas	Natural Gas	189.0	1,655,640,000	1,411,495,406	85.25%
UGP1	Natural Gas	102.5	897,900,000	454,782,000	50.65%
UGP2	Natural Gas	129.0	1,130,040,000	1,034,709,000	91.56%
UGP3	Natural Gas	112.5	985,500,000	739,787,801	75.07%
TGP	Natural Gas	43.7	382,812,000	268,068,000	70.03%
Kinyerezi I	Natural Gas	150.0	1,314,000,000	1,192,210,480	90.73%
Kinyerezi II	Natural Gas	248.2	2,174,232,000	1,791,281,890	82.39%
Mtwara	Natural Gas	30.4	266,304,000	122,173,585	45.88%
Somanga	Natural Gas	7.5	65,700,000	9,335,000	14.21%
Natural Gas Plant Utilisation		**1,013**	**8,872,128,000**	**7,023,843,162**	**79.17%**
Part C: Liquid Fuel Power Plants					
TANESCO Diesel (Zuzu)	HFO&Diesel	7.44	65,174,400	1,622,780	2.49%
Nyakato	HFO&Diesel	63.00	551,880,000	10,936,986	1.98%
Biharamulo	Diesel	1.25	10,950,000	237,440	2.17%
Ngara	Diesel	1.25	10,950,000	847,131	7.74%
Loliondo	Diesel	1.00	8,760,000	-	-
Kasulu	Diesel	3.75	32,850,000	4,534,665	13.80%
Kibondo	Diesel	2.50	21,900,000	2,098,265	9.58%
Liquid Fuel Plant Utilisation		**80.19**	**702,464,400**	**20,277,267**	**2.89%**
TOTAL MAIN GRID			**14,488,952,400**	**9,568,103,901**	**66.04%**

(b) Off-Grid Power Plants Operation Performance for FY 2021/22

Plant's Name	Energy Source	Installed Capacity (kW)	Plant Availability (%)	Plant Utilisation (%)
Kigoma	Diesel	8750	99.00	46.00
Mpanda	Diesel	6250	90.32	48.95
Mafia	Diesel	3200	89.87	28.42
Sumbawanga	Diesel	5000	97.74	38.50
Bukoba	Diesel	2460	94.61	45.25
Inyonga	Diesel	1932	48.48	23.09
Average			**86.67**	**38.37**

Annex 11: Electricity Transmission outage

a) Transmission Line Outage Hours

Voltage(kV)	Outage	2018/19	2019/20	2020/21	2021/22	±%
220	Planned	558	868.87	978	728.12	11
	Unplanned	191	17.19	493	41.35	97
	Sub-Total	**749**	**886.06**	**1471**	**769.47**	**40**
132	Planned	911	248.61	434	149.58	43
	Unplanned	112	30.37	160	58.65	81
	Sub-Total	**1,023**	**278.98**	**594**	**208.23**	**53**
66	Planned	181	63.24	235	303.88	73
	Unplanned	252	0.53	72	115.8	99
	Sub-Total	**433**	**63.77**	**307**	**419.68**	**79**
Total	**Total Planned**	**1650**	**1180.72**	**1647**	**1181.58**	**28**
	Total Unplanned	**555**	**48.09**	**725**	**215.8**	**93**
	Grand Total	**2,205**	**1,228.81**	**2,372**	**1397.38**	**48**

Source: *TANESCO*

b) Transmission Line Outage Frequency

Voltage(kV)	Outage	2018/19	2019/20	2020/21	2021/22
220	Planned	110	112	105	93
	Unplanned	148	65	59	61
	Total	**258**	**177**	**164**	**154**
132	Planned	87	41	57	26
	Unplanned	113	108	126	93
	Total	**200**	**149**	**183**	**119**
66	Planned	16	11	26	28
	Unplanned	22	5	11	11
	Total	**38**	**16**	**37**	**39**
Summary	Total Planned	213	164	188	147
	Total Unplanned	283	178	196	165
	Grand Total	**496**	**342**	**384**	**312**

Source: *TANESCO*

Annex 12: Total Revenue (TZS in millions)

Description	Electricity Sales (Million TZS)			Other Income (Million TZS)			TOTAL (Million TZS)		
FY	2020/21	2021/22	2022/23	2020/21	2021/22	2022/23	2020/21	2021/22	2022/23
TANESCO	1,641,019	1,821,113	1,932,810	224,187	344,636	265,174	1,865,206	2,165,749	2,197,984
Songas	230,285	275,452	255,675	25,270	9,093	-	255,555	284,545	255,675
Mwenga Hydro	4,798	4,353	3,919	1,657	1,749	2,194	6,455	6,102	6,113
Tulila	6,490	4,512	6,247	104	104	-	6,594	4,616	6,247
Mwenga Power	399	517	687	9	78	64	407	596	751
Andoya	789	388	109	34	0	-	823	388	109
TPC	3,265	3,069	2,234	-	-	-	3,265	3,069	2,234
TANWAT	547	486	445	-	-	-	547	486	445
Yovi	760	1,329	1,009	-	-	-	760	1,329	1,009
Matembwe	110	77	14	-	-	-	110	77	14
Luponde	-	857	928	-	-	-	-	857	928
Nextgen	-	1,025	1,544	-	-	-	-	1,025	1,544
Darakuta	464	448	310	-	-	-	464	448	310
TOTAL	1,888,927	2,113,626	2,205,932	251,260	355,661	267,433	2,140,187	2,469,287	2,473,365

Annex 13: Percentage Change of Total Revenue

Description	Electricity Sales			Other Income			TOTAL		
FY	2020/21	2021/22	2022/23	2020/21	2021/22	2022/23	2020/21	2021/22	2022/23
TANESCO	11%	11%	6%	54%	54%	-23%	16%	16%	1%
Songas	3%	20%	-7%	-64%	-64%	-100%	-6%	11%	-10%
Mwenga Hydro	-10%	-9%	-10%	6%	6%	25%	-6%	-5%	0%
Tulila	-30%	-30%	38%	0%	0%	-100%	-30%	-30%	35%
Mwenga Power	10%	30%	33%	820%	820%	-18%	25%	46%	26%
Andoya	-51%	-51%	-72%	-99%	-99%	-100%	-53%	-53%	-72%
TPC		-6%	-27%					-6%	-27%
TANWAT		-11%	-8%					-11%	-8%
Yovi		75%	-24%					75%	-24%
Matembwe		-30%	-82%					-30%	-82%
Luponde			8%						8%
Nextgen			51%						51%
Darakuta		-4%	-31%					-4%	-31%
TOTAL	5%	12%	4%	-5%	42%	-25%	3%	15%	0.2%

Annex 14: TANESCO Sales per Customer Category

Customer Category	Sales (TZS Billions)				Sales (MWh)			
FY	2019/20	2020/21	2021/22	2022/23	2019/20	2020/21	2021/22	2022/23
Domestic low usage (D1)	34	37	38	43	314	337	351	393
General usage (T1)	775	817	899	958	2633	2773	3063	3313
Low Voltage Supply (T2)	161	164	180	191	614	623	684	691
High Voltage Supply (T3)	594	624	704	742	3055	3269	3667	3884
TOTAL	1,564	1,641	1,821	1,933	6,616	7,002	7,765	8,281

Percentage Contribution								
FY	2019/20	2020/21	2021/22	2022/23	2019/20	2020/21	2021/22	2022/23
Domestic low usage (D1)	2%	2%	2%	2%	5%	5%	5%	5%
General usage (T1)	50%	50%	49%	50%	40%	40%	39%	40%
Low Voltage Supply (T2)	10%	10%	10%	10%	9%	9%	9%	8%
High Voltage Supply (T3)	38%	38%	39%	38%	46%	47%	47%	47%

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