THE UNITED REPUBLIC OF TANZANIA

NATIONAL AUDIT OFFICE

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PERFORMANCE AUDIT REPORT ON THE MANAGEMENT OF RENEWABLE ENERGY PROJECTS

CONTROLLER AND AUDITOR GENERAL

MARCH 2026

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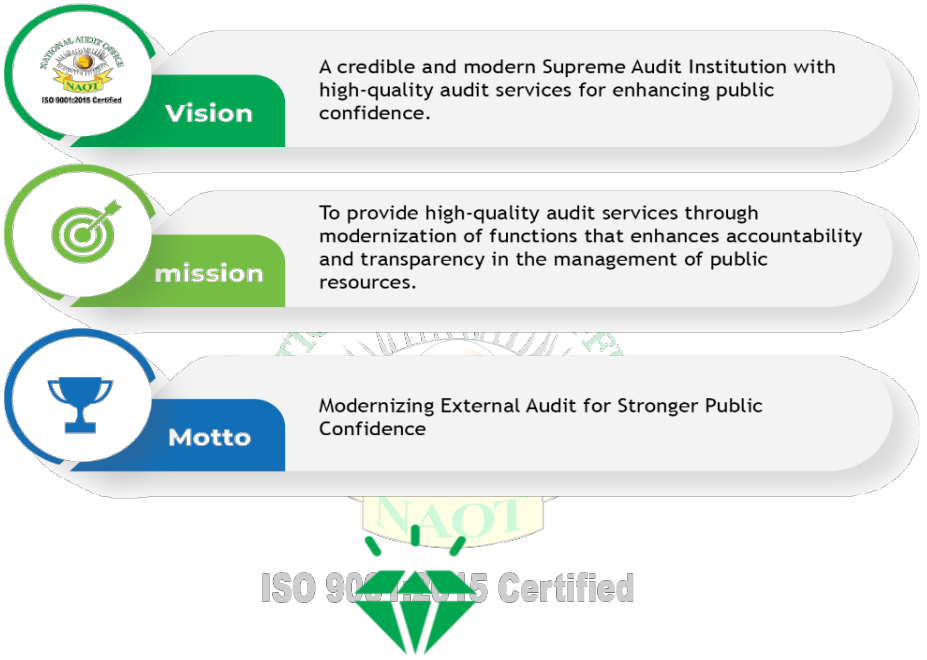

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PREFACE

Section 28 of the Public Audit Act, CAP. 418 gives the mandate to the Controller and Auditor General to carry out Performance Audit (Value-for-Money Audit) to establish the economy, efficiency and effectiveness of any expenditure or use of resources in the Ministries, Departments and Agencies (MDAs), Local Government Authorities (LGAs) and Public Authorities and Other Bodies which involves enquiring, examining, investigating, and reporting, as deemed necessary under the circumstances.

I have the honour to submit to Her Excellency, the President of the United Republic of Tanzania, Hon. Dr. Samia Suluhu Hassan, and through her, to the National Assembly of the United Republic of Tanzania, the Performance Audit Report on the Management of Renewable Energy Projects.

The report contains findings, conclusions, and recommendations directed to the Ministry of Energy (MoE) and the Energy and Water Utilities Regulatory Authority (EWURA). The MoE and EWURA were given the opportunity to review the report and provide comments. I sincerely acknowledge that the inputs provided were constructive and valuable.

My Office will conduct a follow-up at an appropriate time to assess the actions taken in implementing the recommendations outlined in this report.

I would like to thank my staff for their commitment to preparing this report. I also acknowledge the audited entities for their cooperation with my Office, which facilitated the timely completion of the audit.

Charles E. Kichere
Controller and Auditor General
The United Republic of Tanzania
March 2026

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LIST OF ABBREVIATIONS AND ACRONYMS

CAIDI	Customer Average Interruption Duration Index
COD	Commercial Operation Date
CSP	Corporate Strategic Plan
DNO	Distribution Network Operator
EPPs	Emergency Power Producers
EWURA	Energy and Water Utilities Regulatory Authority
FYDP	Third Five-Year Development Plan
HPP	Hydro Power Plant
IPPs	Independent Power Producers
IRENA	The International Renewable Energy Agency
JNHPP	Julius Nyerere Hydropower Project
KPI	Key Performance Indicators
LD	Liquidated Damages
LED	Light-Emitting Diode
LOI	Letter of Intent
LPG	Liquefied Petroleum Gas
MoE	Ministry of Energy
MoU	Memorandum of Understanding
MW	Megawatt
NDC	Nationally Determined Contributions
NEES	National Energy Efficiency Strategy
OGEF	Off-Grid Clean Energy Facility
PPA	Power Purchase Agreement
PSMP	Power System Master Plan
PV	Photovoltaic
R.E	Revised Edition
REA	Rural Energy Agency
RFQ	Request for Qualification
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SDGs	Sustainable Development Goals
SE4ALL	Sustainable Energy for All
SMART	Specific, Measurable, Attainable/Achievable, Relevant and Time-bound
SPPA	Standardised Power Purchase Agreement
SPPs	Small Power Producers
TANESCO	Tanzania Electric Supply Company Limited
TAREA	Tanzania Renewable Energy Association
TaTEDO	Sustainable Energy Services Organisation

TEDAP	Tanzania Energy Development and Access Expansion Project
TFEC	Total Final Energy Consumption
TGDC	Tanzania Geothermal Development Company

EXECUTIVE SUMMARY

Background Information

Renewable energy refers to energy derived from natural processes that are replenished constantly, such as sunlight, wind, biomass, geothermal, and hydropower. Despite the country's vast renewable energy potential, access to electricity remains limited, and approximately 85% of the population continues to depend on traditional energy sources for cooking. The Government of Tanzania has set a target to increase the contribution of renewable energy to the total energy mix to 11,414 MW by 2050[1]. This audit was conducted to assess whether the Ministry of Energy and the Energy and Water Utilities Regulatory Authority (EWURA) have adequately managed renewable energy projects to ensure a sufficient energy mix that enhances energy security and sustainability. This audit covered four Financial Years from 2021/22 to 2024/25.

Main Audit Findings

The audit findings revealed deficiencies in the management of renewable energy projects as detailed below:

Insufficient Contribution of Renewable Energy Projects to the Targeted Energy Mix

The audit acknowledges the efforts of the Government of the United Republic of Tanzania, the Ministry of Energy, and EWURA in overseeing and regulating renewable energy activities. Until 2025, none of the planned 205 MW of solar, 100 MW of wind, and 200 MW of geothermal projects had been commissioned. Furthermore, the JNHPP faced commissioning delays of about 2 years; however, in 2025, it was fully commissioned and raised the hydro share contribution to 66.9%. The audit further noted challenges in evacuating the full amount of power generated from the JNHPP due to incomplete transmission infrastructure. As a result, the renewable energy mix, excluding hydropower, remained at 0.33%, rather than the projected 15%.

[1] United Republic of Tanzania (2024). *Power System Master Plan,* Chapter 4, Para 4.5.3

These shortcomings and their implications for energy security and the transition to cleaner energy sources are detailed below:

(a) Inadequate Implementation of the Pre-development Activities of the Renewable Energy Projects

The pre-development stage of renewable energy projects was hampered by inadequate coordination and oversight of key steps. The Ministry of Energy, through TANESCO, did not fully acquire or secure the strategic generation sites identified in the PSMP. Only the Shinyanga (Kishapu Solar Project) had a title deed among the 46 identified sites. This makes the areas vulnerable to encroachment, increases the risk of future compensation costs, and can delay project preparation.

In addition, although records indicate that developers submitted business plans, feasibility studies, and financial capacity documents, which EWURA approved, they did not demonstrate the adequacy or depth of the reviews conducted. Instead, they mainly indicated compliance with the submission of required documentation, without showing how the content was assessed or the extent to which key risks were evaluated.

(b) Inadequate Implementation of Development Activities of the Renewable Energy Projects

The audit noted that renewable energy projects were not consistently developed on schedule or to the required quality standards, undermining their timely integration into the grid. Delays were observed in projects with signed Standard Power Purchase Agreements (SPPAs), with 13 projects (62%) delayed and others at risk of delay. This was due to financial challenges faced by developers, inadequate regulatory oversight, and the omission of liquidated damages (LD) clauses from the signed SPPAs.

Furthermore, for the Government-led projects (JNHPP), power evacuation infrastructure was not completed on time, hindering the utilisation of installed generation capacity and the stabilisation of the national grid. In addition, the upper segment of the Kihansi Hydropower plant reservoir was not constructed as scheduled.

(c) Inadequate Implementation of Operational Activities of the Renewable Energy Projects

The audit noted inadequate implementation of operational activities for renewable energy projects, despite increased generation between 2021/22 and 2024/25, after the commissioning of four turbines at JNHPP. The Audit noted a number of performance challenges, including regulatory gaps in the registration and monitoring of mini-grids with capacities below 1 MW, overreliance on vulnerable-drought hydropower, inconsistent capacity factors across plants, and inadequate capacity at several operating facilities to report performance data.

Furthermore, the audit noted that, outages caused by inadequate maintenance of transmission infrastructure, prolonged downtime of key units such as Kihansi Turbine No. 3, and unreliable off-grid solar supply due to inadequate battery energy storage systems and cost-recovery constraints undermined operational efficiency. These shortcomings reduced plant reliability, weakened the contribution of renewable energy to the national energy mix, and limited the achievement of PSMP diversification targets.

In addition, renewable energy project files revealed an absence of systems for collecting, storing, or disposing of expired batteries. Furthermore, site visits confirmed battery failures and replacements were conducted without proper management procedures. The absence of regulatory guidance increased the risks of hazardous waste, environmental pollution, and governance gaps in battery accountability for projects with battery-related technology.

(d) Insufficient Coordination and Performance Measurement of the Renewable Energy Project Implementation

The audit noted that coordination and performance measurement across the renewable energy portfolio were not sufficient to ensure the timely delivery of the targeted energy mix. KPIs for renewable energy were not SMART or coherently linked to the Ministry of Energy Strategic Plan 2021/22–2025/26. Project milestones set in PSMPs were not systematically tracked or reported; monitoring was largely limited to budget execution and physical progress, with little assessment of on-time commissioning or outcome delivery.

The sector lacks a centralised, continuously updated database covering grid, mini-grid, and off-grid pipelines (planned, under preparation, under construction, commissioned, and phased out). These gaps have resulted in repeated schedule slippages (e.g., delays in geothermal first power; time shifts affecting hydropower projects at Ruhudji, Rumakali, and Upper Kihansi). Also, solar and wind projects are being bundled into 2026 with no works in progress, inconsistent reporting (e.g., plants appearing in the PSMP but not in implementer plans), and mini-grid encroachments. Inadequate structured coordination and performance measurement undermine the timely achievement of PSMP targets and national renewable energy objectives.

Audit Conclusion

The audit concludes that the Ministry of Energy, EWURA, TANESCO, REA, and private developers have made efforts to promote renewable energy through the PSMP and rural electrification programmes. However, these efforts have not been adequately translated into measurable progress toward energy diversification, and further improvement is required. Oversight across the pre-development, development, and operational stages remains inadequate, resulting in low and inconsistent plant utilisation, delays in project integration into the grid, and slow diversification of the energy mix. The Ministry inadequately maintains a coordinated performance-monitoring system and a unified data system, thereby limiting accountability and informed decision-making.

Audit Recommendations

Recommendations to the Ministry of Energy

The Management of the Ministry of Energy is urged to:

(i) Develop and institutionalise SMART renewable energy KPIs aligned with the Power System Master Plan (PSMP), and ensure systematic tracking and reporting of PSMP milestones through quarterly progress reports to enhance accountability and performance measurement; and

(ii) Establish a centralised national database to capture all initiated grid, mini-grid, and off-grid projects, enabling effective monitoring

of project progress and strengthening coordination among sector stakeholders.

Recommendations to the Energy and Water Utilities Regulatory Authorities

The Management of the Energy and Water Utilities Regulatory Authorities is urged to:

(i) Strengthen the licensing process by reviewing business plans, feasibility studies, and financial capacity reports before issuing licenses, and develop clear templates and criteria to guide the review; and

(ii) Strengthen monitoring by conducting scheduled periodic inspections for all developers to ensure compliance with licence and registration requirements, as well as performance agreements.

CHAPTER ONE

INTRODUCTION

1.1 Background Information

The International Renewable Energy Agency (IRENA) defines renewable energy as energy derived from natural processes that are replenished constantly, including sunlight, wind, biomass, geothermal, and hydropower. Renewable energy technologies play a crucial role in ensuring sustainable access to energy. They help reduce greenhouse gas emissions and enhance energy security. This is particularly true in countries like Tanzania, where a significant portion of the population remains unconnected to the national grid.

According to the Energy Access and Use Situation Survey II, conducted by the National Bureau of Statistics (NBS) in 2020 for the Tanzania Mainland, 73.2% of households in urban areas had access to electricity, compared to 24.5% in rural areas. The country's maximum energy demand as of 2020 was 1,151.66 MW. It has increased to 2,263.44 MW as of November 2024[2]. However, the indicated maximum energy demand reflects actual recorded consumption and does not represent the country's full energy requirement, as it is influenced by suppressed demand resulting from limited access, infrastructure constraints, and affordability challenges. According to the Tanzania Energy Compact of 2025, despite this achievement, household connectivity in mainland Tanzania today is less than 50%, and about 40% in Zanzibar. Tanzania's electricity generation sources include natural gas, hydropower, crude oil, solar, wind, and biomass. The installed generation capacity within the National Grid increased to 2,138 MW as of March 2024, from 1,872.1 MW in the 2022/23 Fiscal Year, representing a 14.2% increase.

According to the National Energy Efficiency Strategy 2024–2034, renewable energy sources, mainly hydropower, form a substantial share of the country's electricity supply, with hydro alone contributing approximately 50% of total generation. As of December 2024, the total installed capacity was 3,404.20 MW comprised of 2,011.27 MW hydro (59.1%); 1,198.82 MW natural gas (35.2%); 101.12 MW heavy fuel oil (HFO) and diesel (three per

[2] EWURA, Electricity Sector Performance Report, 2020 and March 2025

cent); 5 MW solar photovoltaics (PV) (0.1 %); and 87.99 MW biomass and co-generation (2.6%). According to the National Clean Cooking Strategy 2024-2034, over 80% of the country's energy consumption still relies on biomass, predominantly firewood and charcoal, while access to grid electricity remains low in rural and peri-urban areas.

The Government has articulated clear ambitions to increase this share, stating that it aims to raise the contribution of renewable energy to 75% through investments in solar, wind, hydro, and geothermal technologies (World Bank, 2025, p. 8), and attaining 100% accessibility and 75% connectivity to electricity services by 2030 (PSMP, 2025, p.23). Large-scale infrastructure projects, including the 2,115 MW Julius Nyerere Hydropower Project, are central to this strategy. As outlined in the National Energy Efficiency Strategy 2024–2034, Tanzania aims to achieve a cleaner, more inclusive energy future by diversifying its energy mix, promoting decentralised off-grid systems, and improving energy efficiency across all sectors.

Despite these efforts, as outlined in the National Energy Efficiency Strategy (2024–2034), the renewable energy sector in Tanzania continues to face challenges. These obstacles include inadequate awareness of the benefits of energy efficiency, insufficient information about advanced energy technologies and efficient practices, and a shortage of skilled personnel. Furthermore, the sector struggles with inadequate financing mechanisms in energy efficiency and insufficient incentives to introduce fuel technology substitution. Examples of such substitutions include kerosene and wood fuel with electricity or LPG, electric water heaters with wood fuel and solar water heaters, and incandescent lamps with LED lamps.

1.2 Motivation for the Audit

The Audit was motivated by various factors, as detailed below:

(a) Dependence on Fossil Fuels Despite Abundant Renewable Energy Potential: The slow progress in renewable energy development raises concerns about missed opportunities to enhance energy security, reduce costs, and improve rural electrification. The review of the Minister of Energy's speech (2020/21-2023/24) indicated that, despite Tanzania's vast potential for renewable energy, including solar, wind, hydro, and

geothermal, the country remains heavily dependent on fossil fuels, particularly natural gas, for electricity generation. As of May 2022, 60.27% of electricity in the national grid was generated from natural gas, while only 33.91% came from hydropower, and a mere 0.62% from biomass, with negligible contributions from other renewable sources such as solar and wind. This energy mix reflects a slow transition toward clean energy. In addition, it raises concerns about missed opportunities in energy security, cost-effective power generation, and inclusive rural electrification. The installed renewable capacity (outside large hydro) remains low, with solar mini-grids, wind farms, and geothermal resources either in pilot stages or awaiting investment commitments.

(b) Delays in the Completion of Renewable Energy Projects: Over the last two years, there has been little to no progress in commissioning large-scale solar or wind projects, despite several initiatives being repeatedly referenced in budget documents during budget speeches from 2020/21 to 2023/24. Projects such as the Masdar Solar Plant (597 MW) and Total Energies' Wind Farm in Singida (100 MW) have remained in planning stages since at least 2021/22, with no clear implementation timelines. Similarly, geothermal projects in Ngozi, Songwe, and Luhoi continue to experience extended feasibility and exploration phases, some of which date back to the Financial Years 2015/16–2019/20 period. This lack of momentum in diversifying Tanzania's energy mix has slowed the country's transition toward sustainable energy, contributing to inadequate achievements in meeting the rising electricity demand in both rural and urban areas. These delays underscore the need for a performance audit to identify the underlying causes, assess the effectiveness of project planning and management, and recommend measures to accelerate the implementation of renewable energy projects nationwide.

(c) Implementation of National FYDP III (2021/22-2025/26) and SDG 7 on Access to Sustainable Energy for All*:* The Government of Tanzania, through its Third Five-Year Development Plan (FYDP III), aims to expand access to renewable energy as part of its broader goal to improve livelihoods and support industrial growth. The plan identifies solar, wind, biomass, and other clean energy sources as key solutions for rural electrification and reducing environmental harm. It emphasises expanding access to renewable energy for underserved communities. It encourages private sector participation through public-private partnerships and investment

incentives, including the promotion and development of renewable energy technologies (such as biogas, geothermal, LPG, solar, and wind), particularly for rural households and clean cooking initiatives, to address climate change.

The Sustainable Development Goal 7 emphasises ensuring access to affordable, reliable, sustainable, and modern energy for all. This goal has three core targets. Target Number 2 (7.2) specifically calls for a substantial increase in the share of renewable energy in the global energy mix. The corresponding indicator (7.2.1) is the share of renewable energy in the total final energy consumption[3]. In Tanzania, the SDGs have been integrated into and implemented through the National Medium-Term Plans (under the FYDP III). Although efforts to achieve SDG 7 have been acknowledged, they require strengthened action. However, the country faces challenges in transitioning from non-renewable to cleaner and more efficient energy sources. Despite having renewable energy potential, such as solar, wind, hydro, and geothermal, the country continues to face difficulties in attracting sufficient investment and developing infrastructure for a full transition to a zero-carbon energy system.

Therefore, based on the above-discussed factors, a performance audit was needed to underscore the prevailing challenges in the management of renewable energy projects.

1.3 Design of the Audit

1.3.1 Audit Objective

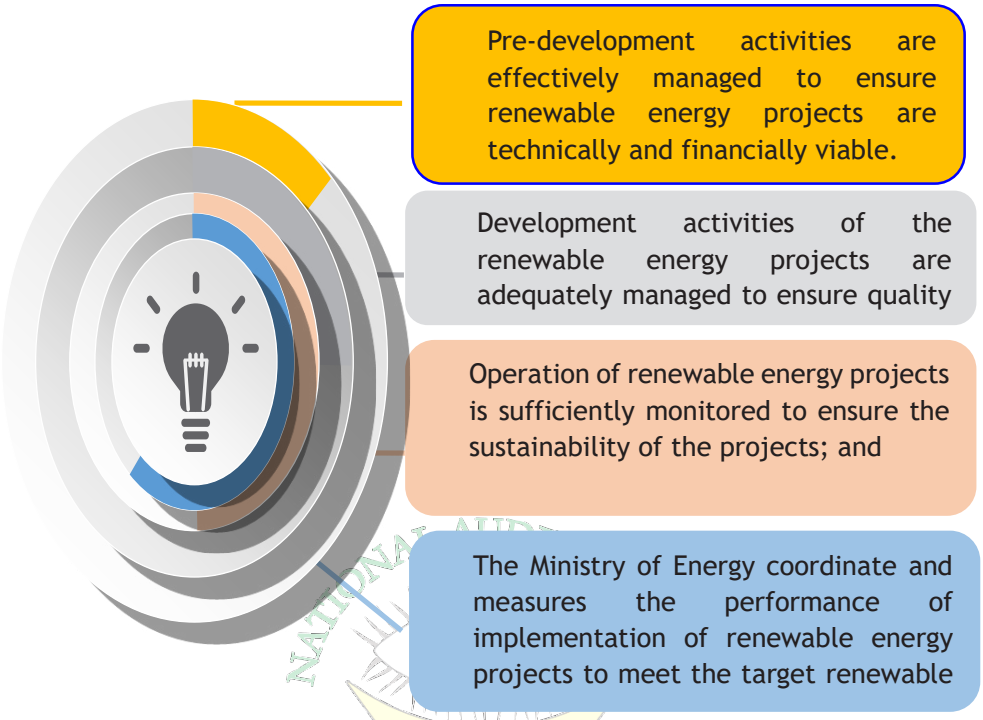
The main objective of the audit was to determine whether the Ministry of Energy and EWURA adequately managed renewable energy projects to ensure a balanced energy mix for enhancing energy security and sustainability in the Country.

1.3.2 Specific Objectives of the Audit

To address the main objective, as presented in **Figure 1.1,** the Audit specifically focused on assessing the following:

[3] https://www.seforall.org/goal-7-targets/renewable-energy, accessed on 16 May 2025

Figure 1.1: Specific Audit Objectives



Specific audit and sub-audit questions were prepared to operationalise the objectives outlined above, as presented in **Appendix 2**.

1.3.3 Scope of the Audit

The main audited entities were the Ministry of Energy and EWURA. The Ministry of Energy was responsible for overseeing and creating the enabling environment for the provision of secure, reliable, affordable, safe, efficient, cost-effective, and environmentally friendly energy services. The Energy and Water Utilities Regulatory Authority (EWURA) had the mandate to perform technical and economic regulation of the electricity supply industry in the mainland. Its regulatory role included licensing, tariff-setting, and monitoring compliance with renewable energy projects.

The audit assessed whether the Ministry of Energy and EWURA were adequately managing renewable energy projects through pre-development activities, development activities (including procurement, construction, and commissioning), project operation, and coordination and performance measurement. The audit evaluated pre-development activities by

examining whether licensing and approval procedures were in place and adequately followed. It also assessed whether strategic sites were identified and protected to prevent conflicting land uses. Furthermore, the audit aimed to verify whether all developers were licensed or registered according to the requirements of the relevant Acts. Finally, it determined whether the submitted feasibility studies, load analyses, and business plans were properly evaluated.

Regarding development activities, the process encompassed procurement, construction, and commissioning. In procurement, the audit evaluated procedures for engaging Independent Power Producers (IPPs), focusing on compliance with procurement laws, transparency, competitive selection, and the timely and appropriate execution of approved projects. For construction, the audit examined project quality, proper tariff structuring, and project management to prevent issues such as land encroachment. Finally, the audit assessed the preparation and finalisation of Power Purchase Agreements (PPAs) and interconnection agreements.

Regarding the operation of renewable energy projects, the audit evaluated the effectiveness of regulatory oversight. This included registering and licensing developers and assessing compliance with submitted performance reports. The audit also reviewed the alignment of Power Purchase Agreements (PPAs) for all projects involving private developers engaged by TANESCO. Furthermore, the audit examined tariff consistency, the regulation of operations and maintenance, and the appropriate disposal of batteries. Lastly, the audit assessed whether inspections and monitoring were conducted as per plans, and whether the quality of service provided met the expected standards.

Moreover, the audit assessed the effectiveness of coordination and oversight for renewable energy activities. In this regard, the audit focused on the reporting structure of renewable energy activities and the effectiveness of coordination with other stakeholders. The audit also examined the strategies in place to promote the sustainable use of renewable resources.

The audit covered four Financial Years, from 2021/22 to 2024/25. This period was chosen to establish a trend in renewable energy management. This is because during this period, the government launched several key

initiatives, including the National Energy Efficiency Strategy 2024–2034, the Tanzania National Energy Compact of 2025, the Electricity Supply Industry Reform Strategy and Road-map (2025-2035), and the Power System Master Plan 2020 (as updated). The government also continued to explore the geothermal energy potential and invested in the construction of solar and wind energy projects.

1.3.4 Assessment Criteria

The evaluation of the audit questions was based on the legal and institutional mandates of the Ministry of Energy and the Energy and Water Utilities Regulatory Authority (EWURA), as articulated in relevant laws, regulations, strategic plans, and guiding frameworks. These criteria served as the basis for assessing the adequacy, timeliness, and effectiveness of oversight, implementation, and coordination mechanisms in managing renewable energy projects in Tanzania across all phases, namely pre-development, development, commissioning, and operation.

(a) Contribution of Renewable Energy to the Targeted Energy Goals

Evaluation of this issue was done based on the Power System Master Plan (PSMP) 2020, which sets specific national targets for renewable energy generation by 2044. These include 800 MW (3.96%) from wind, 715 MW (3.54%) from solar, 995 MW (4.9%) from geothermal, and 5,690.4 MW (28.15%) from hydro. Additionally, the Functions and Organisational Structure of the Ministry of Energy specify that the Renewable Energy Section is responsible for facilitating the development of energy from new sources, including hydro, biomass, and solar photovoltaic systems.

(b) Pre-development Activities for Renewable Energy Projects

Rule 4(6) of the Electricity (Development of Small Power Projects) Rules, 2020 mandates Distribution Network Operators (DNOs) to identify and publicly announce areas of strategic interest for renewable energy development. Rule 7(2)(d)(ii) of the Electricity (Procurement of Power Projects and Approval of Power Purchase Agreements) Rules, 2019 requires EWURA to verify proposed project sites. Additionally, the Electricity Act, CAP. 131 and the EWURA Act, CAP. 414 require all energy developers, including Independent Power Producers (IPPs), to obtain licenses before

initiating operations. Rule 5(2) of the Electricity (Development of Small Power Projects) Rules, 2020, further prohibits Very Small Power Producers (VSPPs) from proceeding without a Letter of Support from the Ministry.

(c) Assessment of the Renewable Energy Projects in the Development Phase Rule 5 (2) of the Electricity (Generation, Transmission and Distribution Activities) Rules, 2023 obligates applicants to submit feasibility or pre-feasibility studies with license applications. Rule 5(3)(a) and Rule 9(2)(f) of the Electricity (Development of Small Power Projects) Rules, 2020 require valid business plans from SPPs and VSPPs. EWURA's internal mandate, as per Para 1.7(b)(ii) of its 2020 Organisational Structure, requires ensuring that technical, environmental, and economic scrutiny is applied at all regulatory stages.

Also, under Section 31(1) of the Electricity Act, CAP 131, EWURA is required to inspect ongoing construction works and ensure compliance with established standards and testing procedures. The Electricity (Procurement of Power Projects and Approval of Power Purchase Agreements) Rules, 2019, provide the basis for assessing the efficiency and timeliness of the procurement process for both solicited and unsolicited proposals. These rules establish timelines for each procurement stage from application approval (Rule 4(1)), submission of indicative timelines (Rule 4(2)(f) and (i)), and issuance of Requests for Qualification and Proposals (Rules 12(1), 15(1)), to the finalization of Power Purchase Agreements (Rule 27(2). Rule 18(d) of the Electricity (Generation, Transmission and Distribution Activities) Rules, 2023 mandates that all generation activities, including engineering, construction, and commissioning, adhere to Prudent Utility Practices and the power purchase agreement.

Additionally, Rule 38(3) of the Electricity (Generation, Transmission and Distribution Activities) Rules, 2023 stipulates that generation licensees must permit EWURA to witness testing procedures. Rules 42(1)– (5) of the Electricity (Development of Small Power Projects) Rules, 2020, also establish procedures for mini-grid operators transitioning to main grid connections and define the options for their future operation.

(d) Operational Activities of the Renewable Energy Projects were Adequately Conducted to Enhance Capacity Attainment

EWURA's role in regulating and monitoring Renewable Energy project operations is derived from multiple legal instruments. The Electricity (Standardised Small Power Projects Tariff) Order, 2015, mandates the setting of tariffs for VSPPs to ensure financial viability, promote rural electrification, and attract private participation. Section 4(e) of the EWURA Act, CAP. 414 empowers the Authority to conduct post-commissioning inspections and ensure adherence to safety, licensing, and performance standards. Furthermore, Section 19(1) of the Electricity Act, CAP 131 mandates timely re-licensing, while Section 30(1) and Section 31(1) require the establishment of systems and procedures to monitor licensee performance, including conducting inspections on the construction of electricity facilities and works and existing facilities to ensure conformity with regulations and standards.

Additionally, EWURA is mandated under Para 1.7.1(iv) of its Organisational Structure, 2020, to oversee electricity trading arrangements and ensure that IPPs apply approved tariffs to protect consumers. Also, Environmental oversight is supported by the Environmental Management (Hazardous Waste Control and Management) Regulations, 2021, which regulate the disposal of hazardous materials, such as batteries used in renewable energy systems.

(e) Performance Measurement of Renewable Energy Projects to ensure the Timely Attainment of Energy Mix Targets

Para 1.6.1(i) of the Ministry's Strategic Plan (2021/22–2025/26) emphasises the importance of developing policies, plans, and performance monitoring tools for renewable energy. Similarly, Para 2.1.1.2 of the Ministry's Functions and Organisation Structure, 2022 assigns the Monitoring and Evaluation (M&E) Unit the task of tracking national energy indicators. Para 3.6(vi) requires the M&E Unit to develop templates and instruments based on KPIs. Moreover, Para 2.14(iv) emphasises the importance of having complete, accurate, and up-to-date data to support energy performance monitoring. Furthermore, the Ministry is mandated to establish and implement the Energy Master Plan, in line with its strategic responsibilities.

(f) Coordination with other Government Entities and Private Developers in Renewable Energy Projects

Objective D of the Ministry's Strategic Plan (2021/22–2025/26) calls for collaboration with the private sector in developing renewable energy initiatives. Para 3.1 of the Functions and Organisation Structure, 2022 tasks the Ministry with planning, promoting, and coordinating the rural modern energy access programmes. Para 2.10 of the same document emphasises the timely dissemination of data and statistics to renewable energy stakeholders. Finally, Para 3.6(vi–viii) of the same document mandates the Ministry to monitor and evaluate coordination outcomes through rapid assessments, evaluations, and impact assessments, using KPIs.

1.3.5 Sampling Techniques, Data Collection and Analysis Methods Used

The sampling, data collection and analysis methods are explained below.

(a) Sampling of Renewable Energy Projects

A purposive sampling strategy was used to ensure comprehensive and information-rich coverage of renewable energy projects across Mainland Tanzania. The audit scope included all renewable energy projects, including hydro, wind, solar, biomass, and geothermal projects, in all lifecycle stages, namely, pre-development, development, and operations.

For the pre-development stage, 29 projects were included across the Financial Years 2021/22 to 2024/25. This approach allowed for a thorough assessment of how the Ministry of Energy and EWURA oversaw project planning and preparatory activities. Geothermal projects were categorised as pre-development because they were still in the resource confirmation phase. By the time this audit was conducted, no geothermal project had reached the development stage. Two projects, namely the Kishapu Solar PV Project (50 MW) and the Malagarasi Hydropower Plant in the Kigoma region (49.5 MW), which were under construction by TANESCO, were categorised as in the development stage. These were the only projects under construction as of June 2025, so they were purposively selected for the audit.

With regard to the operational phase (as of June 2025), the audit applied purposive criteria to select projects for site visits based on: project type (hydro, wind, solar, biomass); regulatory status (licensed above 1 MW, registered 1 MW or below); and the highest energy generation within each category. This method ensured representation across the different types and scales of renewable energy projects, facilitating a comprehensive review of regulatory practices and operational challenges. The sampling population consisted of both licensed projects above 1 MW and registered projects of 1 MW or less. Within each group, the highest-generating project in each technology was selected, except for the Julius Nyerere Hydropower Project (2,115 MW), which was excluded due to its recent detailed technical audit.

Three Licensed Projects (Capacity above 1 MW), namely: Kihansi Hydro Power Plant, Morogoro Region; TPC Biomass Power Plant, Kilimanjaro Region; and Solawazi Solar Power Plant, Kigoma Region, were selected for the visit. For the wind project, the Mwenga Wind Project (Mwenga Hydro Ltd) in Iringa Region was the only wind power plant in the country, hence it was also purposively selected.

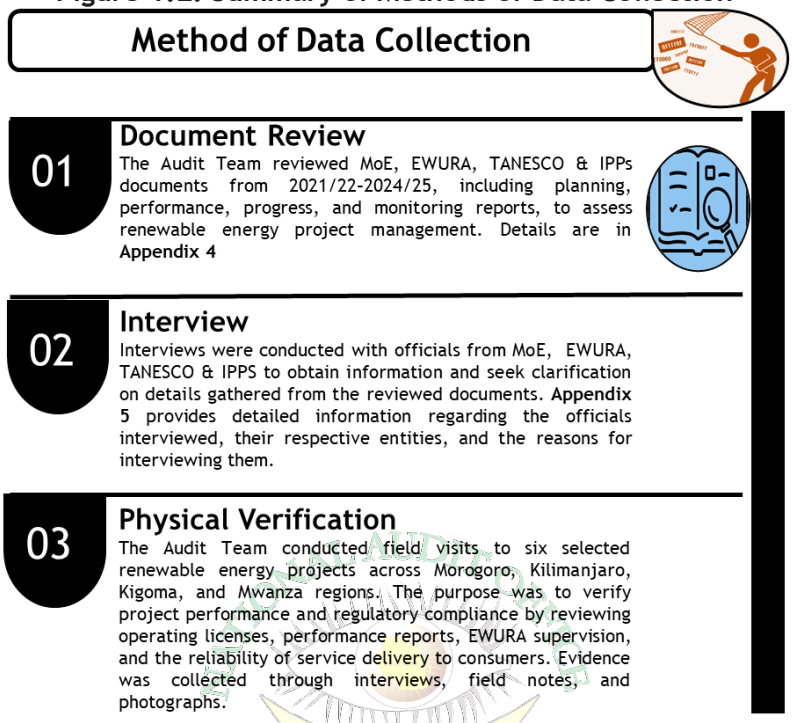
Two Registered Projects (Capacity 1 MW or below), namely, Yovi Hydropower Co. Ltd Power Plant, Kilosa District, Morogoro Region, and Jumeme Rural Power Supply Ltd Solar Power Plant, Ukerewe District, Mwanza Region, were selected for the visits.

For more details on the rationale for selecting the visited projects by type of development, refer to Appendices 3(a) and 3 (b) of this report.

(b) Methods for Data Collection

The audit collected qualitative and quantitative data to provide robust, compelling evidence for the EWURA and the Ministry of Energy's performance in coordinating and overseeing the renewable energy sector. The Audit Team applied various methods for data collection, including interviews, document review, and physical observation, to gather information from the visited entity(ies) as summarised in **Figure 1.2.**

Figure 1.2: Summary of Methods of Data Collection

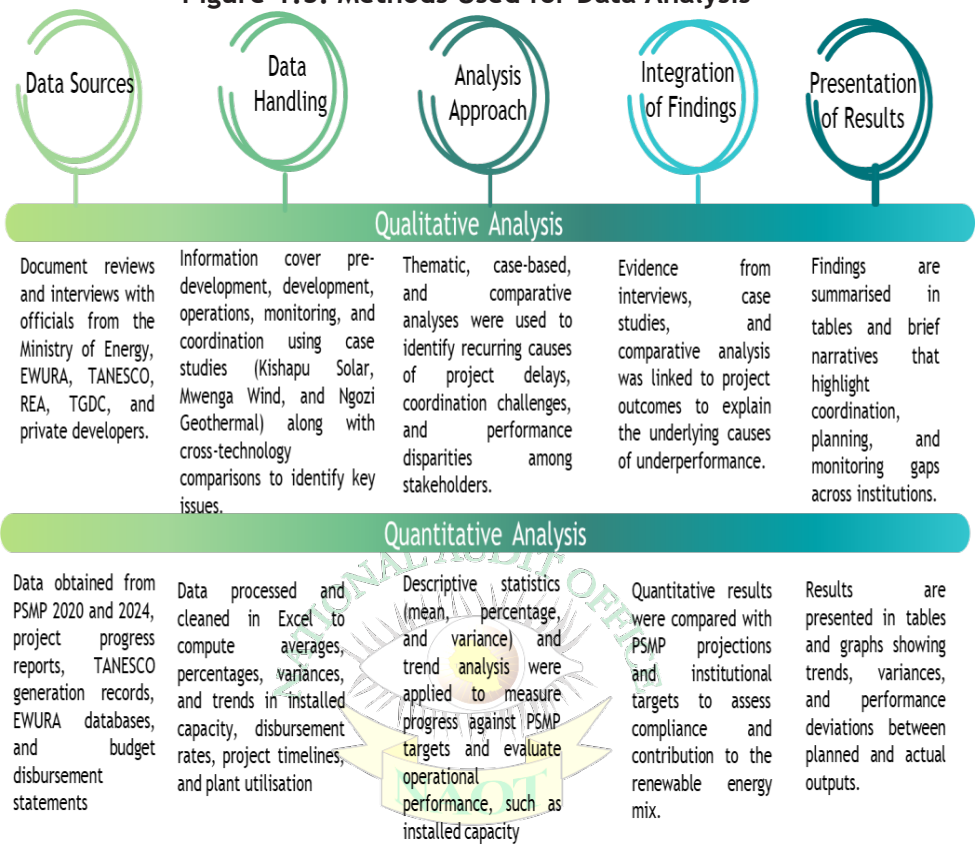


Source: Auditors' Analysis of the Methods for Data Collection, 2025

(c) Methods for Data Analysis

The audit employed tailored qualitative and quantitative analysis methods to address its objectives and ensure a comprehensive evaluation of performance in managing renewable energy projects, as detailed in **Figure 1.3.**

Figure 1.3: Methods Used for Data Analysis



Source: Auditors' Analysis of the Methods for Data Analysis, 2025

1.4 Validation of the Data and Findings

The Ministry of Energy and EWURA were given the opportunity to go through the draft report and comment on the information and figures presented. Ministry of Energy and EWURA confirmed the accuracy of the information and figures presented in this Audit Report. The responses of the Management of the Ministry of Energy and EWURA on the issued recommendations are presented in **Appendix 1**. Furthermore, the information was cross-checked and discussed with experts in the field of renewable energy to confirm its validity and the facts presented in the audit report.

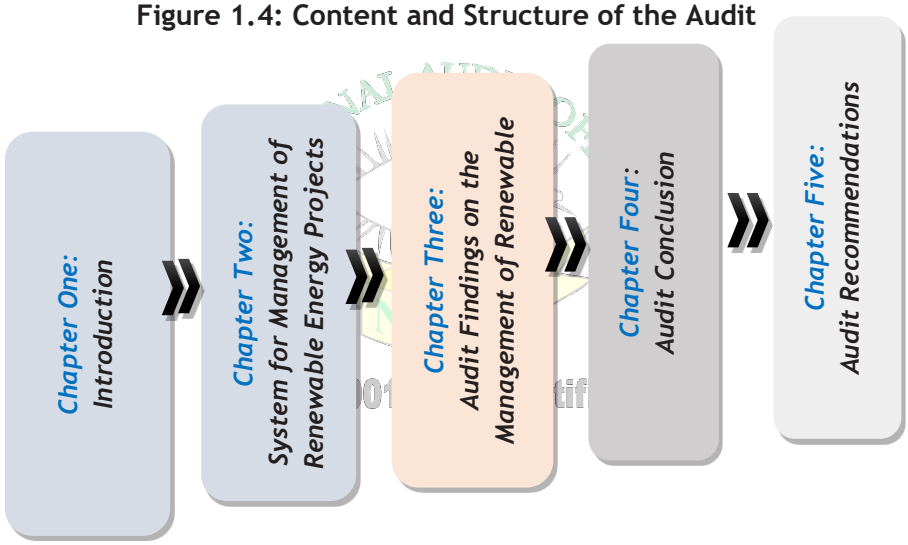
1.5 Standards Used for the Audit

The audit was conducted in accordance with the International Standards on Supreme Audit Institutions (ISSAIs) for performance audit, as issued by the International Organisation of Supreme Audit Institutions (INTOSAI). These standards require that an audit be planned and performed to obtain sufficient and appropriate audit evidence, providing a reasonable basis for the findings and conclusions in relation to the audit objectives.

1.6 Structure of the Audit Report

The report is divided into various parts, as presented in **Figure 1.4**.

Figure 1.4: Content and Structure of the Audit



CHAPTER TWO

SYSTEMS FOR THE MANAGEMENT OF RENEWABLE ENERGY PROJECTS

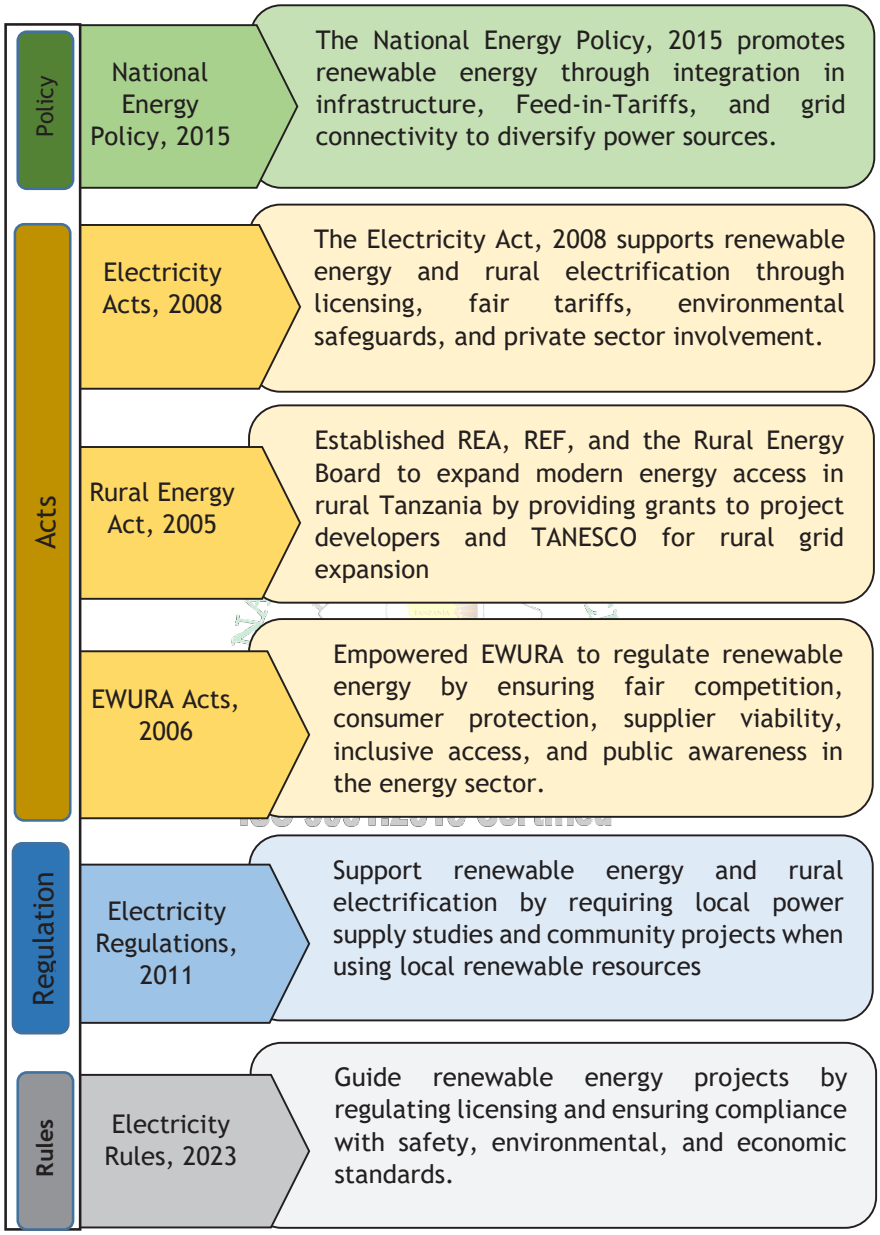
2.1 Introduction

This chapter describes the management system for renewable energy projects, identifies key stakeholders, and outlines the responsibilities of the major players. Additionally, it describes the strategies and processes used to manage renewable energy in the country.

2.2 Legal Frameworks Governing the Renewable Energy Projects

The governing framework for renewable energy projects in the Country comprises various policies, legislation (laws and regulations) and rules. These have been illustrated in **Figure 2.1.**

Figure 2.1: Policies, Acts, Regulations and Rules which Govern the Renewable Energy Projects in Tanzania

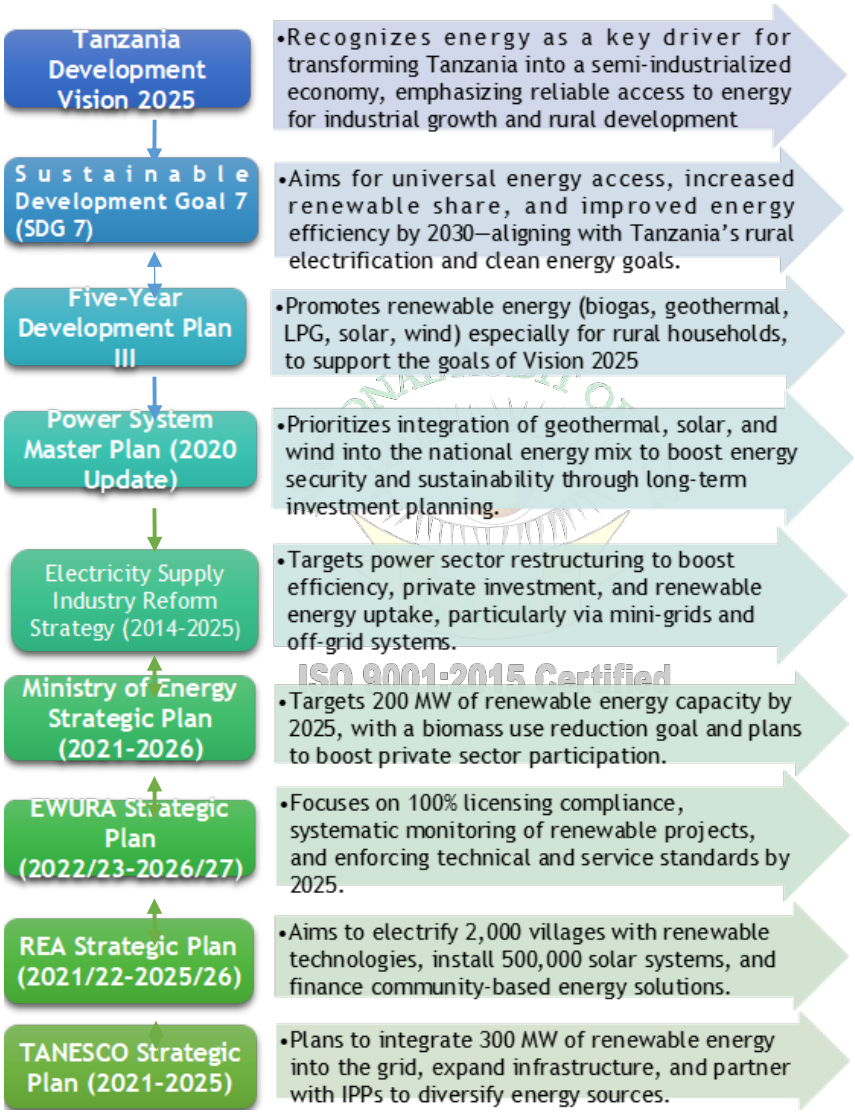


Source: Auditors' Analysis from Regulatory Documents, 2025

2.2.1 Goals, Objectives, and Strategic Plans

The goals and objectives for the country's renewable energy project activities are outlined in **Figure 2.2**.

Figure 2.2: Goals and Strategies

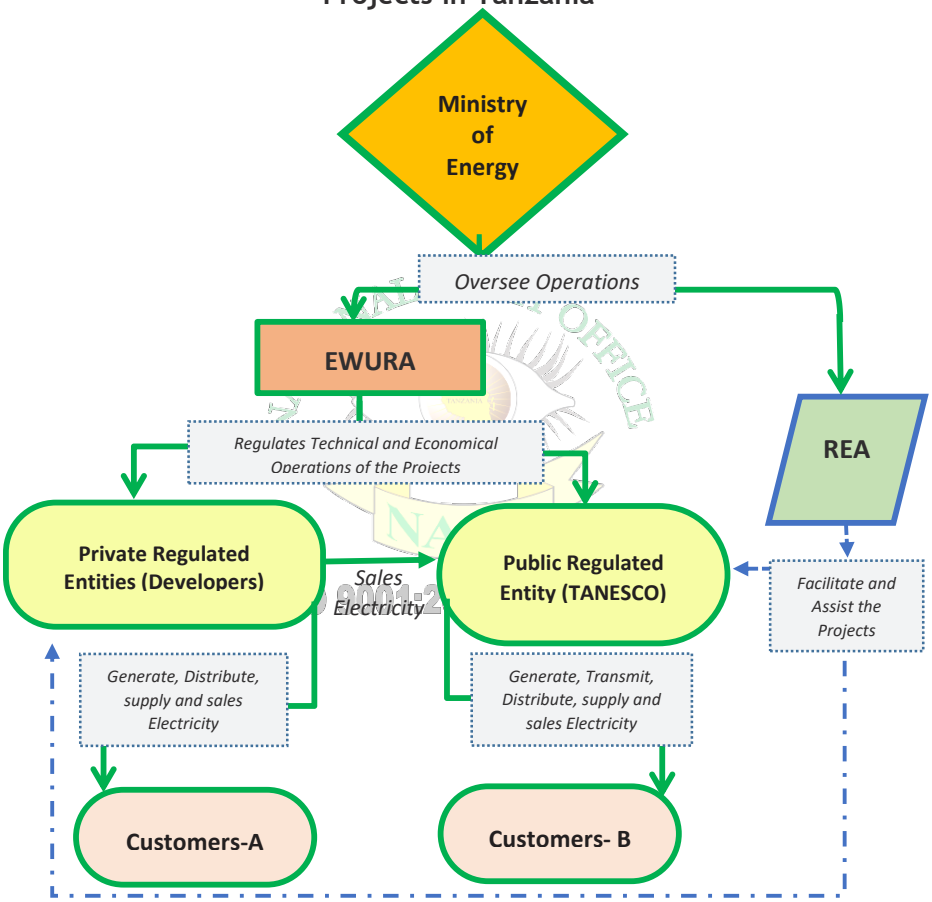


Source: Auditors' Analysis from Strategic Documents, 2025

2.3 Roles and Responsibilities of Key Actors in the Management of the Renewable Energy Projects

The functional relationships among the key actors and stakeholders involved in renewable energy projects in Tanzania are summarised in **Figure 2.3.**

Figure 2.3: Relationship Among Key Actors in the Renewable Energy Projects in Tanzania



Source: Auditors' Analysis on Laws, Regulations and the Report titled "Electricity Sub-Sector Regulatory Performance Update, December 2024", 2025

Key:

Directive and supply

Facilitating and Assisting the Projects

Ministry of Energy: The Ministry of Energy (MoE) drives Tanzania's renewable energy transition by shaping policies, strategies, and regulations to expand sustainable access and diversify energy sources. Through its Electricity and Renewable Energy Division, it promotes solar, wind, biomass, and small hydropower; supports off-grid solutions; conducts resource mapping; advances energy efficiency; and coordinates research. The Ministry also fosters collaboration among stakeholders and investment to align national initiatives with global goals. The Ministry of Energy has established several key documents to guide the development and management of the energy sector, including the National Energy Policy (2015), the Ministry's Strategic Plan (2021/22–2025/26), and the Power System Master Plans (2020 and 2024 Updates).

Energy and Water Utilities Regulatory Authority (EWURA): EWURA regulates Tanzania's renewable energy sector by licensing providers, overseeing IPPs and SPPs, approving PPAs, and enforcing technical, legal, and environmental standards. It conducts inspections, collects sector data, and promotes fair, safe, and sustainable practices while fostering private-sector participation.

Rural Energy Agency: The Rural Energy Agency (REA) drives rural electrification with renewable energy by funding projects, assisting off-grid and mini-grid systems, and collaborating with developers. Through programmes such as TEDAP, OGEF, and the Rural Energy Fund, it provides technical assistance and ensures compliance with environmental and social safeguards. Tanzania Electric Supply Company Limited (TANESCO), Tanzania's National Utility, manages grid and off-grid electrification and integrates renewables into the grid. It works with REA and IPPs on power purchase agreements, oversees transmission and distribution, and generates 86.5 % of the country's power, with the rest from IPPs, EPPs, and SPPs. Its subsidiary, TGDC, develops geothermal resources through exploration, drilling, and field management.

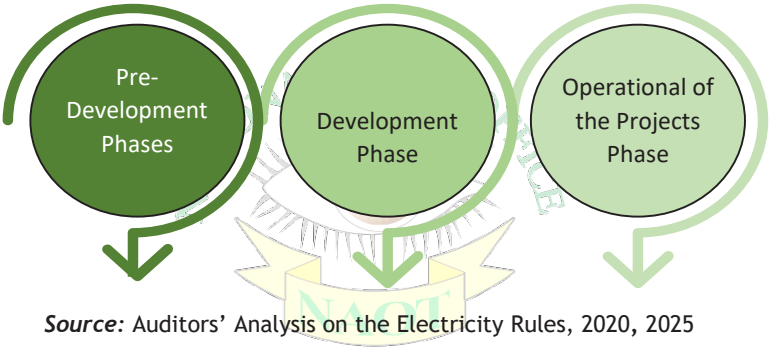
Non-governmental Organisations and other Institutions: NGOs and institutions support access to sustainable and renewable energy in Tanzania. TAREA unites sector stakeholders to promote renewable options, while TaTEDO-SESO has advanced sustainable energy by offering technical support and expertise to the private sector since the early 1990s. Other active NGOs include WODSTA, which develops efficient stoves; Solar

Innovations of Tanzania; AMKA Trust; CARE-Tanzania; and institutions such as TEMDO, which also participate by providing support and forums for renewable energy in Tanzania.

2.4 Processes for the Management of the Renewable Energy Projects in the Country

In Tanzania, renewable energy projects follow three main phases: pre-development, Development, and Operation and Maintenance. **Figure 2.4** summarises these stages (details are provided in the following paragraph).

Figure 2.4: Key Phases involved in the Management of the Renewable Energy Projects

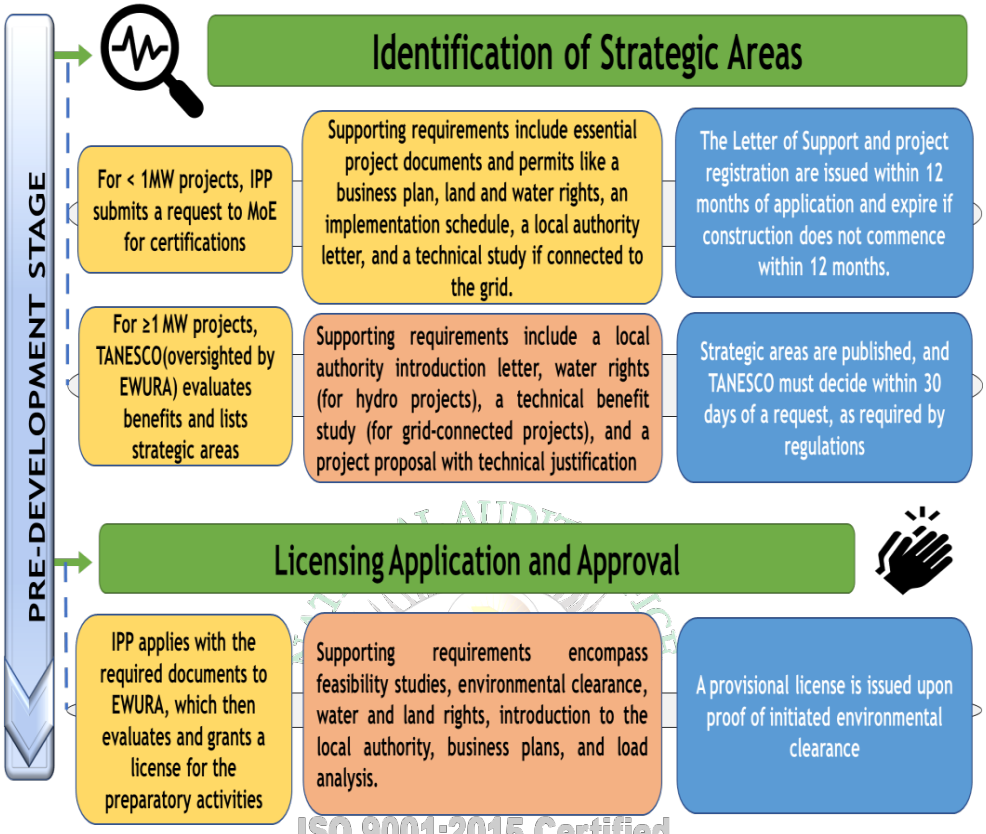


Source: Auditors' Analysis on the Electricity Rules, 2020, 2025

2.4.1 Pre-Development Phase

This initial phase includes the process for identifying the Strategic Areas and licensing developers, including TANESCO and Independent Power Producers (IPPs). Refer to **Figure 2.5** for the activities of the Pre-Development stage of the RE projects in Tanzania.

Figure 2.5: Stages for Pre-Development Activities



Source: Auditors' Analysis on Electricity (Development of Small Power Projects) Rules, 2020, 2025

2.4.2 Development Phase

This phase encompasses the procurement process through to project commissioning. At this stage, EWURA, as the regulatory body, is the key actor responsible for assessing adherence to the procurement process from the time of commissioning. Refer to **Figure 2.6** for the activities of the development stage of the RE projects in Tanzania. This figure outlines the key processes guide EWURA evaluation from procurement to commissioning.

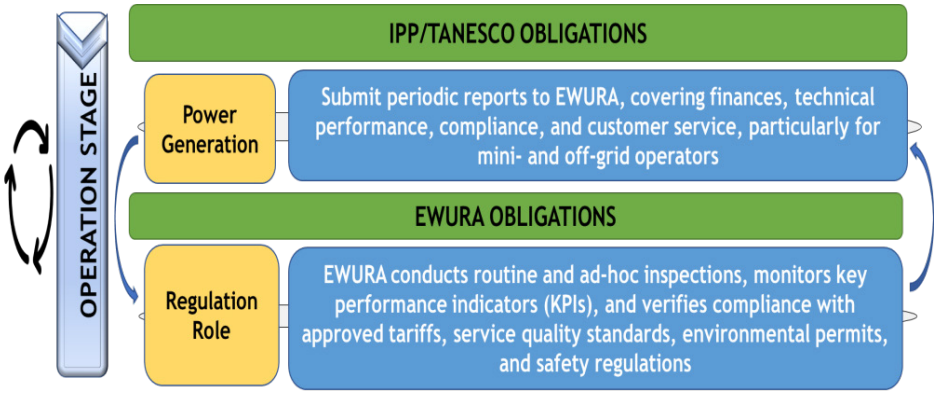
Figure 2.6: Stages for Development Activities

Source: Auditors' Analysis on Electricity (Development of Small Power Projects), Rules 2020, 2025

2.4.3 Operation Phase

During the operation phase, IPP/TANESCO begins power generation activities and is required to comply with the full scope of technical, environmental, financial, and regulatory obligations outlined in their licenses. The operational activities, as described in **Figure 2.7**, begin immediately after project commissioning and commercial operation and continue throughout the project's lifespan.

Figure 2.7: Stages for Operational Activities



Source: Auditors' Analysis on the Electricity (Development of Small Power Projects) Rules, 2020, 2025

If the project involves a Power Purchase Agreement (PPA), the IPP must ensure accurate energy metering and billing in accordance with the contractual terms, often in coordination with TANESCO. The operation stage concludes upon the expiry of the license term, the facility's decommissioning, or its transfer under a new agreement, subject to regulatory approval and fulfilment of environmental rehabilitation obligations.

2.5 Resources for Managing the Implementation of Renewable Energy

The successful implementation of renewable energy projects in Tanzania depends heavily on the availability and efficient use of financial and human resources by the key and responsible institutions, namely the Energy and Water Utilities Regulatory Authority (EWURA) and the Ministry of Energy. These institutions have distinct yet complementary mandates in regulating, promoting, and executing renewable energy initiatives.

(a) Financial Resources for the Implementation and Oversight of Renewable Energy Activities

Table 2.1 shows the budget allocations and actual funds disbursed to EWURA and the Ministry of Energy for implementing or overseeing renewable energy-related activities between the Financial Years 2021/22 and 2023/24.

Table 2.1: Budgeted vs Disbursed Funds by Ministry of Energy and EWURA for Renewable Energy Activities

Financial Year	Ministry of Energy (Fund TZS million)			EWURA (Fund TZS million)		
	Budgeted	Disbursed	Release (%)	Budgeted	Disbursed	Release (%)
2021/22	2,638	2,000	75	500	470	94
2022/23	2,638	2,094	79	670	620	92
2023/24	1,950	1,840	94	710	660	92

Source: Auditors' Analysis on EWURA Performance Reports and Ministry of Energy Budget Statements from Year 2021–2024, 2025

Table 2.1 shows that between 2021/22 and 2023/24, the Ministry received between 75% and 94% of its approved budget allocation each year. Furthermore, it shows that EWURA received between 92% and 94% of its allocated funds, enabling it to adequately fulfil its regulatory and oversight responsibilities during the period under review.

(b) Human Resources Management

EWURA and the Ministry of Energy have allocated sufficient staff to support and facilitate the implementation of the renewable project, as shown in **Table 2.2**.

Table 2.2: Human Resources Status at EWURA and the Ministry Responsible for Renewable Energy

Financial Year	Number of Ministry Staff		Number of EWURA Staff	
	Required	Available	Required	Available
2021/22	43	43	40	40
2022/23	43	43	40	40
2023/24	43	43	94	94
2024/25	43	43	94	94

Source: Auditors' Analysis on the Scheme of Service for EWURA, 2024, 2025

Table 2.2 shows the staff status at the Ministry of Energy and EWURA for the period under review. It was noted that from the Financial Year 2021/22 to 2024/25, EWURA and the Ministry did not have a staffing gap.

CHAPTER THREE

AUDIT FINDINGS

3.1 Introduction

This chapter presents the findings on the management of the renewable energy projects. The findings show the extent to which renewable energy projects contribute to the attainment of the targeted energy mix. Additionally, the audit findings provide information about the management of the pre-development and operational activities of the renewable energy projects. Finally, the chapter discusses how the Ministry of Energy measures the performance of these renewable energy projects and the challenges faced in their implementation.

3.2 Implementation Gaps in the Renewable Energy Projects

The Audit noted challenges in the implementation of renewable energy projects in Tanzania. These challenges have led to gaps in the implementation of renewable energy projects and prevented the attainment of national renewable energy goals. The implementation gaps and associated challenges are discussed in detail below.

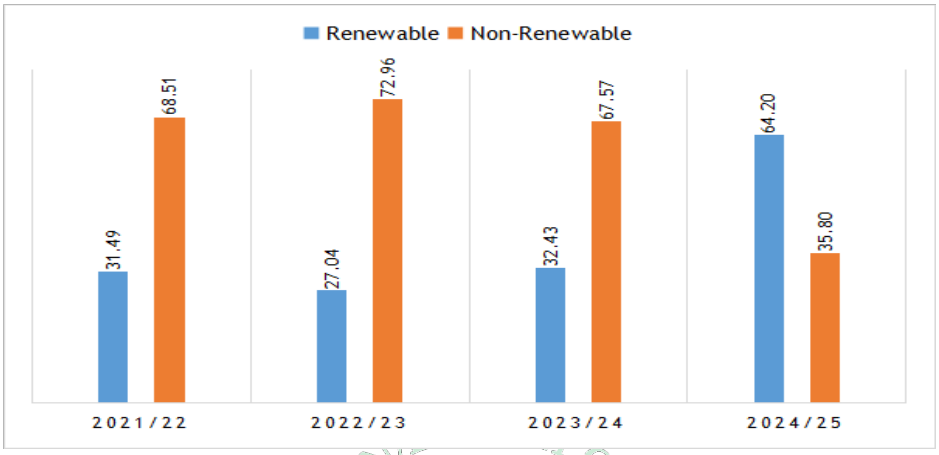
3.2.1 Insufficient Contribution of Renewable Energy Projects to the Targeted Energy Mix

The audit found that the contribution of renewable energy, particularly solar, wind, and geothermal, remained significantly below national targets throughout 2021/22–2024/25. Despite incremental improvements in hydropower, which raised the hydro contribution to 66.9% following the commissioning and partial operation of the JNHPP, inadequate power evacuation infrastructure has led to limited utilisation of the generated hydro power.

The overall renewable share (excluding large hydropower) remained below five per cent, compared to the PSMP 2024 update projection of 15%. The Audit noted that the shortfalls in production of energy from renewable sources have resulted from delayed project development and operational inefficiencies across the renewable energy portfolios. **Figures 3.1** and **3.2** illustrate the persistent underperformance of non-hydro renewable energy

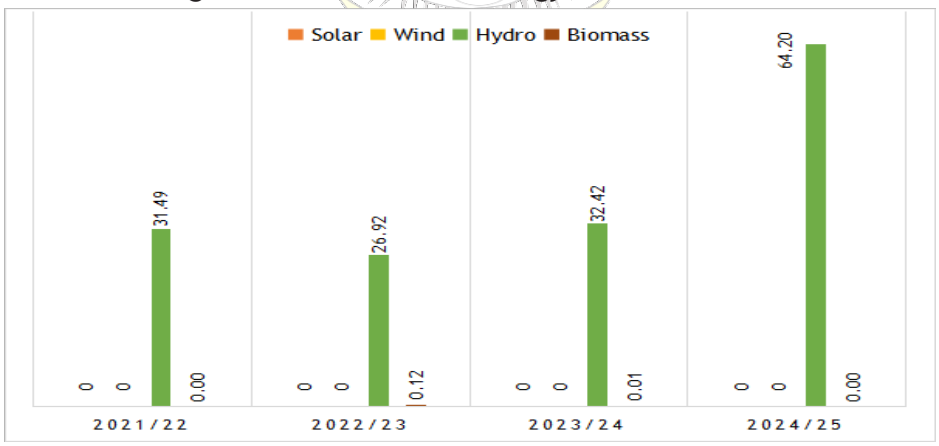
projects, with solar and wind contributing about 0.28% and 0.05% to the national energy mix, respectively.

Figure 3.1: Energy Generation Mix



Source: Auditors' Analysis on EWURA Performance Report from the Financial Year 2021/22 to 2024/25 (as of March 2025)

Figure 3.2: Renewable Energy Mix Generation



Source: Auditors' Analysis on *EWURA* Performance Report from the Financial Year 2021/22 to 2024/25 (as of March 2025)

Figures 3.1 and **3.2** show that the renewable energy projects have operated below their installed capacity. Such findings were discussed in detail in the sections below.

3.2.2 The Proportion of Non-hydro Renewable Energy in the National Energy Mix was below the Target

Review of the Power System Master Plan (PSMP) 2020 Update indicated that Tanzania was projected to commission 205 MW of solar (150 MW Singida, 55 MW Dodoma), 100 MW of wind (Singida I), 200 MW of geothermal (Ngozi, Songwe, Kiejo-Mbaka, Luhoi and Natron), and 2,115 MW from the Julius Nyerere Hydropower Project (JNHPP) by 2025. These projects are intended to diversify the energy mix and increase the share of renewable energy to approximately 15% by 2025.

Furthermore, the review of the Power System Master Plan (PSMP) 2024 Update found that none of the planned 505 MW solar, wind, and geothermal projects had been commissioned by 2025. Moreover, JNHPP also experienced delays of about 2 years, as the planned commissioning year was 2022. As a result, the renewable energy share (excluding hydroelectric power) remained below 5%, significantly short of the projected 15%. **Table 3.1** provides a summary of the planned and actual commissioning status of the renewable energy projects by 2025.

Table 3.1: Planned vs Actual Commissioned Renewable Projects by 2025

Project	Planned Capacity	Planned Commissioning	Actual Commissioning (2025)	Status
Singida Solar	150 MW	2023	0	Still under study
Dodoma Solar	55 MW	2024	0	Still under study
Kishapu Solar (unplanned in PSMP)	150 MW	2025	(50 MW under construction)	Although delayed, it reached more than 70%
Singida Wind I	100 MW	2025	0	Not started
Lake Ngozi Geothermal	70 MW	2025	0	Resource confirmation
Songwe Geothermal	5 MW	2023	0	Resource confirmation

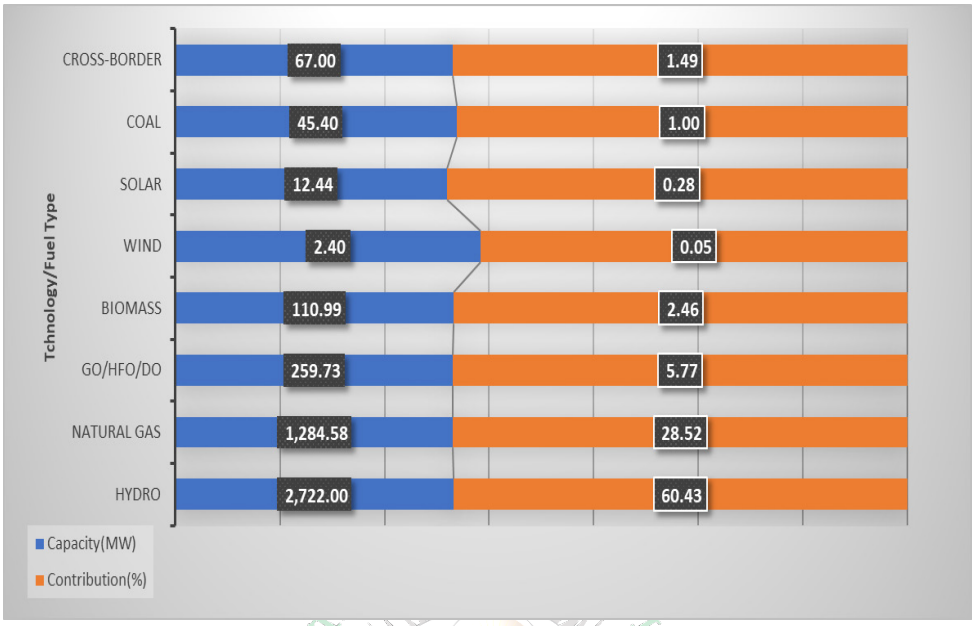
Project	Planned Capacity	Planned Commissioning	Actual Commissioning (2025)	Status
Kiejo-Mbaka Geothermal	60 MW	2024	0	Resource confirmation
Luhoi Geothermal	5 MW	2025	0	Resource confirmation
Natron Geothermal	60 MW	2025	0	Resource confirmation

Source: Auditors' Analysis of the Updated Power System Master Plan (PSMP) 2020, 2025

Table 3.1 shows that none of the 400 MW of planned solar, wind, and geothermal capacity (excluding Kishapu Solar, which was not part of the original PSMP 2020 projections) was commissioned by 2025. This represents a cumulative capacity gap of 400 MW across all renewable energy technologies. Furthermore, 86% of the planned projects remained at the study or resource-confirmation stages, while only 14% (Kishapu Solar 50 MW under construction) showed partial physical progress. The absence of commissioning and the dominance of early-stage project statuses reflect widespread systemic delays in advancing renewable energy projects from planning to implementation.

In addition, the review of the Electricity Sub-Sector Regulatory Performance Updates of September 2025 indicated that the installed capacity of the country is 4,504.54 MW across all fuel sources and cross-border, distributed as shown in **Figure 3.3.**

Figure 3.3: Installed Capacity by Technology/Fuel Type



***Source*:** Electricity Sub-Sector Regulatory Performance Updates of September 2025

Figure 3.3 shows that hydro has the highest contribution at 60.43%, while Wind and solar have the lowest contributions at 0.05% and 0.28%, respectively.

The following factors have contributed to the slow progress towards the achievement of the PSMP renewable energy targets for the National Energy Mix:

(a) Prioritisation Towards Natural Gas and Hydropower Projects

The audit noted, through the Ministry of Energy progress reports, that national priorities between 2021 and 2025 continued to emphasise natural gas and large hydropower projects such as JNHPP (2,115 MW), Ruhudji (358 MW), Rumakali (222 MW), Malagarasi (49.5 MW), Kikonge (300 MW), and Kakono (87 MW), at the expense of the renewable energy projects, particularly solar and wind. Only the Kishapu Solar Project (50 MW) was under construction, while others, such as Zuzu, Manyoni, and Kititimo Singida Wind, have remained at preparatory stages for a long time. This investment pattern shows a continued bias toward gas and large hydropower

projects, hindering diversification and delaying the achievement of the PSMP 2024 renewable energy mix targets.

(b) Lack of Implementation Plans for PSMP 2020

The review of the Power System Master Plan (PSMP 2020) and the National Energy Compact (2025) revealed that the enabling frameworks to attract renewable energy investments were not operationalised during the period 2020–2025. The absence of implementation strategies under the PSMP created a policy-to-execution gap, resulting in delays to critical initiatives, including the Renewable IPP Procurement Framework, which was deferred until 2026. This reflects a limited institutional readiness and inadequate coordination in delivering on renewable energy priorities.

Based on these factors, the share of renewable energy in the national energy mix stagnated below five per cent, far short of the 15% target set for 2025. The delayed operationalisation of PSMP projections has slowed energy diversification, eroded investor confidence, and impeded Tanzania's transition toward a resilient and balanced energy system.

3.2.3 Renewable Energy Projects Operated Below Installed Capacity

The Power System Master Plan (PSMP) 2020 Update projected the commissioning of 205 MW of solar, 100 MW of wind, 200 MW of geothermal, and 2,115 MW from the Julius Nyerere Hydropower Project (JNHPP) by 2025. These projects were expected to diversify the national energy mix and increase the share of renewable energy to approximately 15% by 2025.

A review of the document titled "Power Plants, Energy Installed capacity (MW) and Actual Generation for Renewable Energy" for the year period 2022–2024 found that renewable energy plants operated significantly below their installed capacities and well short of PSMP projections.

In 2024, hydropower plants had a combined installed capacity of approximately 2,795 MW but generated an estimated average daily output of only 727 MW, equivalent to 26% utilisation.

Analysis of individual hydropower stations shows a similar situation of under-performance. In the year 2024, JNHPP (2,115 MW), Kidatu (204 MW),

Kihansi (180 MW), and Mtera (80 MW) generated average outputs of 421 MW, 107 MW, 94 MW, and 38 MW, respectively. This reflects capacity utilisation rates of 20% for JNHPP, 52% for both Kidatu and Kihansi, and 48% for Mtera. Smaller hydropower plants demonstrated mixed performance: New Pangani Falls generated 60% of its installed capacity, while Hale operated at only 5% and Nyumba ya Mungu at 87.5%.

Solar and biomass plants also demonstrated limited performance. Despite incremental improvements between 2022 and 2024, total output from these technologies remained below 30% of installed capacity. **Table 3.2** provides detailed comparisons of installed capacity and daily average production for renewable energy projects.

Table 3.2: Comparison between the Installed Capacity and Daily Average Production for the Renewable Energy Projects

Plant Name	Source	Main-grid / Off-grid	Installed Capacity 2024 (MW)	Daily Average production (MW)			Auditors Remarks on the Trend
				2022	2023	2024	
JNHPP	Hydro	Main Grid	2,115	-	-	421	Only 2024 reported low-capacity utilisation.
Kidatu	Hydro	Main Grid	204	143	132	107	Continuous decline in output since 2022.
Kihansi	Hydro	Main Grid	180	57	80	94	Steady improvement each year, still low-capacity utilisation.
Mtera	Hydro	Main Grid	80	65	53	38	Low-capacity utilisation results in a consistent reduction in production.
N/P Falls	Hydro	Main Grid	68	14	27	41	Low-capacity utilisation has risen steadily over the past eight years,

Plant Name	Source	Main-grid / Off-grid	Installed Capacity 2024 (MW)	Daily Average production (MW)			Auditors Remarks on the Trend
				2022	2023	2024	
							particularly in the last three.
Hale	Hydro	Main Grid	21	3	3	1	A drop in low-capacity utilisation was in 2024, following two stable years.
Nyumbaya Mungu	Hydro	Main Grid	8	2	3	7	Consistent yearly growth.
Uwemba	Hydro	Main Grid	1	0	0	0	No production for 3 years
Mwenga-SPP	Hydro	Main Grid	4	1	2	3	Gradual improvement each year.
Tulila - SPP	Hydro	Main Grid	5	3	3	3	No improvement, consistently below target.
Ikondo	Hydro	Off-grid	0	0	0	-	Remains inactive.
Lupondе	Hydro	Off-grid	1	1	1	0	Minimal and unchanged production. No production in year 3.
Andoya	Hydro	Off-grid	1	-	0	0	No production; missing earlier data.
Darakuta	Hydro	Main Grid	0	0	0	0	No performance information was recorded.
Yovi	Hydro	Main Grid	1	1	1	0	low but consistent production.
Rusumo	Hydro	Main Grid	27	-	-	11	Only 2024 data available.

Plant Name	Source	Main-grid / Off-grid	Installed Capacity 2024 (MW)	Daily Average production (MW)			Auditors Remarks on the Trend
				2022	2023	2024	
Tanwat	Biomass and waste	Main Grid	3	0	0	0	No production over the years.
TPC	Biomass and waste	Main Grid	9	1	1	2	Slight improvement noted.
Bagamoyo Sugar (new)	Biomass and waste	Main Grid	2	-	-	0	New Plant
Next Gen	Solar	Off-grid	5	0	1	1	started production in 2023 and has maintained. Still below target.

Source: Auditors' Analysis of the Power Plants, Energy Installed capacity (MW) and Actual Generation- Monthly Data (MWH) for Renewable Energy, 2024

Table 3.2 shows that over 70% of renewable power plants operated at less than 60% of their installed capacity in 2024. Several plants, such as Uwemba, Tanwat, Bagamoyo Sugar, Ikondo, and Darakuta, recorded no production during the reviewed period. Furthermore, for the majority of hydropower stations with complete data (2022–2024), output either remained consistently low or declined, indicating long-standing operational inefficiencies rather than temporary fluctuations.

Interviews with EWURA officials and the Ministry of Energy revealed the factors that contributed to these gaps:

(i) Inadequate enforcement of maintenance and operational standards. Limited grid absorption capacity and transmission bottlenecks further hindered dispatching available renewable power, particularly during peak hydropower periods;

(ii) Consequence of system demand, and water availability (for hydro power stations); and

(iii) Transmission constraints: in the case of the Julius Nyerere Hydropower Project (JNHPP), power evacuation was further constrained by limited transmission infrastructures, pending completion of the Chalinze–Dodoma and Chalinze-Kinyerezi-Mkuranga transmission lines. This led to intentional curtailing of power generation from JNHPP and other renewable energy projects to align with demand levels and grid evacuation capability, rather than due to technical, operational, or performance-related shortcomings of the projects themselves.

As a result, renewable energy systems contributed less to the national power supply than projected in the PSMP and the Third Five-Year Development Plan (FYDP III). The persistent underutilisation of the installed capacity undermined progress toward energy diversification and reduced the overall efficiency of Tanzania's renewable energy investments.

3.2.4 Inadequate Alignment of Strategic and Operational Plans with PSMP Targets

The audit noted that alignment between the PSMP 2020 targets and the Ministry of Energy's and TANESCO's key planning documents was not effectively achieved. Key strategic plans, including the National Energy Compact (2025) and the National Energy Efficiency Strategy (2024–2034), were not synchronised with PSMP projections, leading to inconsistencies in planning, execution, and monitoring.

(i) Misalignment between PSMP 2020, MoE Strategic Plan, TANESCO CSP, and Actual Status

The Ministry of Energy did not translate the PSMP 2020 projections into measurable milestones within its Strategic Plan. Instead, the plan contained only general statements concerning "promotion" of solar, wind, and geothermal technologies, without specifying capacity targets or commissioning timelines.

Similarly, TANESCO's Corporate Strategic Plan (CSP 2024/25–2034/35) diverged significantly from PSMP timelines by extending planned renewable capacity additions, particularly solar, wind, and geothermal, from 2025 to as late as 2029 and beyond.

This misalignment was further demonstrated in **Table 3.3**, which compares PSMP 2020 projections against the Ministry's Strategic Plan, TANESCO's CSP, and the actual status by 2025.

Table 3.3: Misalignment between PSMP 2020, MoE Strategic Plan, TANESCO CSP, and Actual Status

Source of Energy	PSMP 2020 (by 2025)	MoE Strategic Plan 2021/22-2025/26	TANESCO CSP 2024/25-2034/35	Actual Installed Capacity Status by 2025 (MW)	Extent of Gap (MW)
Solar	205	No target	565 MW (over 10 years) not by 2025	0	205
Wind	100	No target	600 MW via IPPs by 2034	0	100
Geothermal	200	No target	55 MW by 2029	0	200
Hydro (JNHPP)	2,115	No target	CSP includes JNHPP as "flagship," but commissioning is delayed beyond 2025	2,115 MW	-

Source: Auditors' Analysis on PSMP 2020, MoE Strategic Plan 2021/22–2025/26, and TANESCO CSP 2024/25–2034/35

Table 3.3 shows that none of the 505 MW of solar, wind, and geothermal capacity planned under PSMP 2020 for commissioning by 2025 was reflected in the Ministry's Strategic Plan or TANESCO's CSP. The Ministry did not indicate renewable MW targets in its strategic outputs in the PSMP, while TANESCO postponed all of the PSMP solar, wind, and geothermal capacity beyond 2030.

For hydropower, the PSMP target for JNHPP commissioning (2,115 MW by 2022) was also not met, resulting in a 100% delay in this flagship project. This statistical pattern demonstrates misalignment among planning instruments in the country's energy sector.

In light of this gap, the Ministry of Energy (MoE) clarified that the Strategic Plan was a high-level policy and planning framework that outlines strategic

objectives, priorities, and indicative targets. It is not intended to provide detailed engineering forecasts, system dispatch scenarios, or operational commitments. Such technical and implementation-level details including generation expansion, demand forecasting, transmission planning, renewable energy integration, and energy efficiency measures are addressed in specialized sector documents, notably the Power System Master Plan (PSMP 2024 Update), Renewable Energy Strategy (2024–2034), National Energy Compact (2025–2030), and other implementation plans that guide actual project development and system operations.

The audit noted that these documents are expected to function as independent planning instruments. However, they lack a clearly articulated implementation strategy, including defined timelines, responsible entities, financing arrangements, coordination mechanisms, and monitoring and evaluation frameworks. As a result, there is limited assurance that the strategic objectives and technical plans will be effectively translated into coordinated and actionable implementation.

The effect of this misalignment is that none of the renewable energy targets for 2025 was met. Inconsistent planning cycles, unidentified measurable milestones, and the absence of coordinated implementation strategies prevented the sector from delivering the diversification outcomes envisioned in the PSMP 2020 update. As a result, the national generation mix remains dominated by hydropower and natural gas, contrary to national policy goals.

(ii) Misalignment of the Power System Master Plans of 2020 and the Update of 2024 with the National Energy Compact (2025) and the National Renewable Energy Strategy 2024-2034

Interviews with the Ministry of Energy officials revealed that the PSMP is intended to serve as the primary guiding document for national energy planning. Therefore, subsequent strategies such as the National Energy Compact (2025) and the National Energy Efficiency Strategy (2024–2034) were to align with PSMP projections.

However, as of 2025 (the PSMP 2020 target year), 2,115 MW of the planned 2,620 MW of renewable energy capacity had been realised, achieving an overall implementation rate of 80.7%. Moreover, no power development was

achieved for solar (205 MW), wind (100 MW), or geothermal (200 MW) by the target year, resulting in a a 100% gap for each of these technologies. The PSMP 2024 Update did not establish revised, quantified renewable energy targets for the 2030 horizon; instead, it rescheduled delivery through indicative project pipelines. Subsequently, the National Energy Compact revised aggregate renewable targets to 1,973 MW by 2030, while the National Renewable Energy Strategy (2024–2034) further deferred delivery, targeting 3,484 MW by 2031, confirming a temporal shift of PSMP 2020 commitments to later planning cycles. **Table 3.4** illustrates these disparities.

Table 3.4: Status of the Alignment of the PSMP 2020 Against the PSMP 2024(Update), National Energy Compact and National Renewable Energy Strategy 2024-2034

Source of Energy	PSMP 2020 (Target in MW by 2025)	PSMP 2024 Update (Target in MW by 2030)	NEC[4] (Target in MW by 2030)	NRES[5] Target (MW by 2034)	Extent of Misalignment
Solar	205[6]	No firm target stated	463	150	205 MW gap by 2025; -113 MW vs PSMP by 203 MW
Wind	100	No confirmed capacity	500	470	100 MW by 2025; -30 MW vs NEC by 2031
Geothermal	200	No confirmed capacity	130	290	200 MW by 2025; +160 MW vs NEC by 2031
Hydro (JNHPP)	2,115	1,306[7] existing then, the commissioning was rescheduled over an	880	2,574	2,115 MW by 2025; +1,694 MW vs NEC by 2031

[4] National Energy Compact

[5] National Renewable Energy Strategy 2024–2034

[6] (Singida 150, Dodoma 55)

[7] This figure reported in National Energy Efficiency Strategy (2024–2034)

Source of Energy	PSMP 2020 (Target in MW by 2025)	PSMP 2024 Update (Target in MW by 2030)	NEC[4] (Target in MW by 2030)	NRES[5] Target (MW by 2034)	Extent of Misalignment
		extended timeline			
Total	2,620	-	1,973	3,484	-2,620 MW by 2025; +1,511 MW vs NEC by 2031

Source: Auditors' Analysis on PSMP 2020 Against PSMP 2024 Update, National Energy Compact and National Renewable Energy Strategy, 2024-2034

A comparative analysis of **Table 3.4** shows that the full 2,620 MW of renewable energy capacity targeted under the PSMP 2020 for delivery by 2025, comprising 205 MW solar, 100 MW wind, 200 MW geothermal, and 2,115 MW JNHPP. However, as of 2025, only 2,115 MW, equivalent to 80.7%, was achieved, while 505 MW was not achieved within the planned time frame, representing a 19.3% implementation gap. Under the National Energy Compact (2030), aggregate renewable targets were revised downward to 1,973 MW, representing a 647 MW (24.7%) reduction from the PSMP 2020 targets. Specifically, the geothermal target was reduced from 200 MW to 130 MW, a 35% reduction, while hydropower was reduced from 2,115 MW to 880 MW, a 58.4% reduction by 2030. The National Renewable Energy Strategy (2024-2034) reintroduces a higher aggregate capacity of 3,484 MW by 2031, indicating that the majority of PSMP 2020 capacity was deferred by approximately 6-8 years rather than cancelled, resulting in significant temporal strategic misalignment across planning frameworks.

The misalignment stems from the lack of an institutional mechanism to synchronise energy-sector strategies. Instead of reinforcing PSMP projections, the National Renewable Energy Strategy 2024-2034 and National Energy Compact effectively replaced them with new timelines and priorities, to 2031. The shift from the PSMP 2020 update to the National Energy Compact 2025 and National Renewable Energy 2024-2034 undermined the PSMP's credibility as the guiding document. Instead of serving as a benchmark for progress, its milestones have been postponed, leading to delays in achieving the intended energy targets.

3.3 Inadequate Management of Pre-Development Activities of the Projects

This section presents the findings on the management of the pre-development phase of renewable energy projects in Tanzania. The pre-development stage is a critical determinant of project success, as it establishes the foundation for licensing, land acquisition, feasibility assessment, and financial readiness. Shortcomings at this early stage contribute to delays in project preparation and undermine the achievement of national renewable energy targets. The detailed findings regarding the pre-development phase of renewable energy projects in Tanzania are discussed below.

3.3.1 Gaps in EWURA's Management of Statutory Timelines for Processing Project Applications

EWURA was legally required to manage time effectively when processing applications for renewable energy projects. This mandate aligns with the provisions of both the Electricity (Procurement of Power Projects and Approval of Power Purchase Agreements) Rules, 2019 and the Electricity (Development of Small Power Projects) Rules, 2020. Together, these two rules set statutory benchmarks to ensure timely, predictable, and transparent decision-making for project developers.

Table 3.5 provides a summary of responsibilities to ensure effective time management in the processing of project applications.

Table 3.5: Time Management Responsibilities for Renewable Energy Projects

Entity	Rule Reference	Time Requirement
EWURA	Procurement Rules, 2019 – Rule 5	Notify the applicant of an incomplete application within 10 working days.
	Procurement Rules, 2019 – Rule 6(3)	Complete detailed evaluation of the application (feasibility, financial, environmental, business plan) within 30 working days.
	Procurement Rules, 2019 – Rule 7	Issue a decision (approve, reject, or refer back) immediately after evaluation, within a 30-day window after detailed evaluation.

Entity	Rule Reference	Time Requirement
	Procurement Rules, 2019 – Rule 9(2)	Notify the purchasing licensee of concerns on project changes within 45 working days.
	SPP Rules, 2020 – Rule 5(5)	The letter of Support ceases to have effect if construction does not commence within 12 months from issuance.
TANESCO (Distribution Network Operator)	SPP Rules, 2020 – Rule 11(1)	Decide on Letter of Intent (LOI) within 30 working days of request.
	SPP Rules, 2020 – Rule 12(1)– (3)	LOI valid for 12 months; may be extended by 6 months, for a total of not more than 18 months.
	SPP Rules, 2020 – Rule 16(1)	Provide preliminary engineering assessment & interconnection cost estimate within 45 days of LOI issuance.
	SPP Rules, 2020 – Rule 27(2)	Evaluate bids and prepare recommendations within 60 days after the submission deadline.
	SPP Rules, 2020 – Rule 27(4)	Publish results of qualified bidders within 7 days of Tender Board decision.
	SPP Rules, 2020 – Rule 28(1)	Issue a Request for Proposal (RFP) within 30 days of announcing qualified bidders; the RFP remains open for up to 15 months.

***Source*:** Electricity (Procurement of Power Projects and Approval of Power Purchase Agreements) Rules, 2019 and Electricity (Development of Small Power Projects) Rules, 2020

The audit reviewed pre-development, development, and operational documents, including correspondence between EWURA, TANESCO, and Independent Power Producers (IPPs). The review found that EWURA did not enforce or maintain a system to record and track the receipt and processing dates of project applications submitted by developers. This is contrary to the Electricity (Development of Small Power Projects) Rules, 2020 and the Electricity (Procurement of Power Projects and Approval of Power Purchase Agreements) Rules, 2019.

However, the review of the annual performance reports revealed that this gap occurred because EWURA has not developed and implemented a systematic process or internal control mechanism to monitor and report compliance with statutory time requirements. Lack of time management in processing applications increases the risk of unnecessary delays in renewable energy project approvals. Ultimately, this may delay achieving the generation targets set in the Power System Master Plan (PSMP).

3.3.2 Incomplete Acquisition of Strategic Areas Identified in the PSMP 2020 Update

The audit established that forty-six (46) generation projects identified under the Power System Master Plan (PSMP) 2020 remained at the identification stage. These projects have a combined potential of 5,705.6 MW for short-term planning by the end of 2028, comprising 2,995.6 MW of hydropower, 715 MW of solar, 1,000 MW of wind, and 995 MW of geothermal. Contrary to Rule 4(6) of the Electricity (Development of Small Power Projects) Rules, 2020, none of these projects has progressed to the land ringfenced or resource acquisition phase, further Rule 4(6) of the Electricity (Development of Small Power Projects) Rules, 2020 requires the Ministry of Energy, through TANESCO, to secure and publish in widely circulated newspapers all areas identified as strategically important for future power development. However, no comprehensive formal acquisition has taken place, as reflected in **Table 3.6**.

The audit verified that only the Shinyanga site had documented title deeds among the identified sites. It was noted that 45 of 46 sites identified in the Power System Master Plan (PSMP) remained formally unacquired.

Furthermore, neither TANESCO nor Local Government Authorities have demarcated the identified areas to prevent encroachment before formal acquisition. This increases the risk of encroachment and potential land conflicts. **Table 3.6** shows that all geothermal and wind sites, as well as 27 hydropower and 5 solar sites, had not undergone formal land acquisition. The absence of timely land securing and demarcation demonstrates that the Ministry of Energy and TANESCO have not prioritised the formal acquisition of these strategic areas.

Table 3.6: Status of Land Acquisition

Energy Source	Number of Projects	Project Name(s)	Status of Land/ Resource Acquisition	Proposed Installed Capacity (MW)
Hydro-power	27	Murongo/Kikagati, Ruhudji, Songwe Manolo, Rumakali, Kakono, Upper Kihansi, Masigira, Kikonge, Mnyera Kwanini, Mpanga, Mnyera Taveta, Songwe Sofre, Iringa (Nginayo), Iringa (Ibosa), Mnyera-Mnyera Sites, Ikondo Mnyera, Mnyera Kisingo, Mnyera Ruaha, Mnyera Pumbwe, Iringa Kilolo, Bupigu (Songwe), Mbarali, Njombe, Mhanga, Songea, Nakatuta (Liparamba), Kikuletwa	Not Acquired	2,995.60
Solar	5	Dodoma, Dodoma II, Manyoni, Same, Singida,	Not Acquired	715
Wind	6	Singida I, Makambako, Njombe I, Singida II, Njombe II, Singida III	Not Acquired	1,000
Geothermal	7	Songwe, Ngozi (Wellhead & I), Kiejo-Mbaka, Natron, Luhoi, Ngozi II, Geothermal Phases I-IV	Not Acquired	995

Source: Auditors' Analysis on Power System Master Plan (PSMP), 2025

The Ministry of Energy responded that land identified under the PSMP was not intended for immediate acquisition but would be acquired progressively once an investor, project readiness, and financing are confirmed. This phased approach is intended to avoid unnecessary displacement, speculation, and financial burden, and is considered adequate planning. Land for Government-owned projects is handled through the Ministry of Finance following project verification.

However, the audit maintained that while phased acquisition is acceptable, the absence of early legal or administrative land protection exposes PSMP-

identified sites to encroachment, delays, reallocation and higher costs. Relying on investor[8] availability shifts state responsibility for strategic infrastructure, and ongoing compensation for Government projects demonstrates shortcomings in early planning safeguards.

3.3.3 Existence of Inadequate Review of Detailed Records for Business Plans, Feasibility Studies, and the Financial Capacity of Licensed Projects

A review of EWURA's Licensing and Order Information System (LOIS) and a checklist for conducting the review revealed that EWURA conducts reviews; however, the review records lacked sufficient details to identify the review activities recorded and determine their adequacy. LOIS did not provide comments on the documents reviewed, the aspects assessed, or any identified deficiencies. Furthermore, the system did not adequately capture the analysis of feasibility or pre-feasibility study reports.

This practice is contrary to Rule 5(2)(a),(b) and (c) of the Electricity (Generation, Transmission and Distribution Activities) Rules, 2024, and Rule 5(3)(a) and Rule 9(2)(f) of the Electricity (Development of Small Power Projects) Rules, 2020, which require feasibility studies and business plans to form part of the approval process.

The inability to conduct business plan reviews, feasibility studies, and financial capacity assessments effectively was attributed to the absence of structured procedures for these analyses. Instead of applying a systematic review process, EWURA relied solely on the Ministry of Energy and TANESCO's reviews of compliance, without verifying their adequacy. This gap increases the risk of licensing projects whose technical, financial, or operational assumptions have not been sufficiently validated. By reviewing business plans, feasibility studies, and applicants' financial capacity without adequate assessment, EWURA risks licensing or registering projects without assurance that their financing models, technical assumptions, or risk management strategies are adequately evaluated. This increases the

[8] Land costs for private projects are ultimately paid by consumers through tariffs, making early land protection essential to avoid encroachment, higher compensation, and increased electricity prices.

likelihood that approved projects will not be completed or operated as intended, thereby reducing their potential contribution to national energy targets.

3.3.4 Inadequate Facilitation of Access to Carbon Credit Financing for Renewable Energy Projects by the Ministry of Energy

The review of the National Carbon Monitoring Centre database as of December 2025 noted that three projects were registered to benefit from the carbon credit financing: the Mwenga Hydro, Luponde Hydro, and Suma Hydro projects.

Despite the Ministry of Energy identifying and implementing renewable energy investments, such as JNHPP (2,115 MW), Malagarasi HPP (49 MW), and Kishapu Solar (50 MW), none had prepared carbon credit documentation or appeared in the National Carbon Registry, resulting in lost financing opportunities.

Similarly, Independent Power Producers (IPPs) operating solar, mini-grid, and biomass projects are not responding to register and access the financing opportunity.

This gap reflects coordination shortfalls and indicates that the Ministry has not operationalised its mandate under Regulation 14 of the Environmental Management (Control and Management of Carbon Trading) Regulations, 2022, which requires the Ministry of Energy to identify eligible projects or facilitate sector clearance. Also, the National Climate Change Response Strategy (2021–2026) reinforces emphasis on these duties. The Strategy specifically calls for mobilising climate financing, strengthening public–private partnerships, building stakeholders' capacity, and coordinating efforts to implement mitigation projects aligned with the Nationally Determined Contributions (NDCs).

The absence of a carbon finance strategy and its implementation implies that Tanzania is left behind in generating carbon credit revenues. These funds could help ease the cost of grid expansion, reduce financing pressures on new projects, and strengthen the sector's long-term financial sustainability. Without corrective action, ongoing projects will continue to

lose revenue that could otherwise support a more resilient, better-funded energy system.

3.4 Inadequate Development Activities for Renewable Energy Projects

The development stage covers the period from the commencement of construction to the commissioning of a project. A review of TANESCO and EWURA documentation, supported by selected site verifications, revealed shortcomings in the execution of development activities for renewable energy projects. These shortcomings have affected the timely integration of renewable energy capacity into the national grid, as the detailed findings below indicate.

3.4.1 Inadequate Development of Renewable Energy Projects to Ensure Timely Integration into the Grids

This section presents the findings on the management of the development project to ensure timely integration into the grid. The audit identifies several key issues. First, the project signed the SPPA but did not integrate the power into the grid on schedule. Furthermore, the power evacuation infrastructure for JNHPP was only partially completed, and the Kihansi segment remains under development. The detailed findings are outlined below.

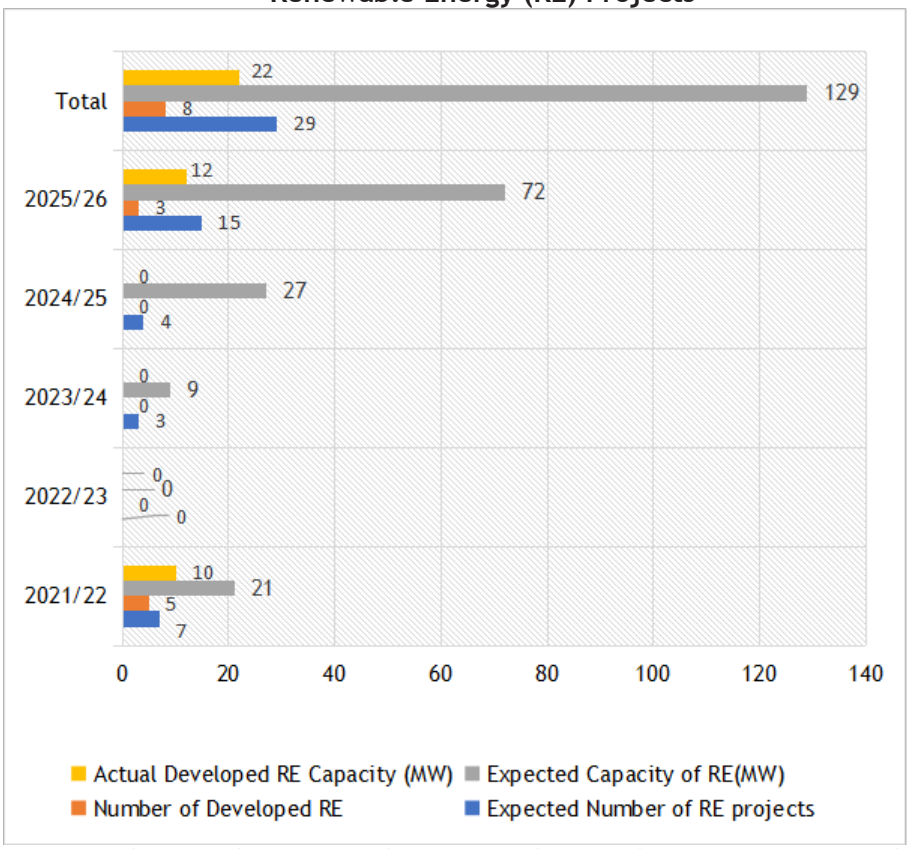
(a) The Signed SPPA Project was not Delivered on Time to Ensure Timely Integration into the National Grid

The audit assessed the electricity capacity (in MW) which was expected to be delivered between 2021/22 and 2025/26, based on SPPAs signed between TANESCO and developers. These agreements were intended to enable timely grid connection, improve voltage profiles towards nominal standards, and reduce Distribution Network Operator (DNO) system losses by at least 10% compared to existing levels.

However, analysis of EWURA's SPPA approvals, signed SPPAs, and TANESCO's and EWURA's implementation reports showed that renewable energy projects were not integrated into the grid as planned, contrary to Rule 39(1) of the Electricity (Development of Small Power Projects) Rules, 2020, which

requires developers to achieve the Commercial Operation Date (COD) in accordance with SPPA timelines. Moreover, Para 3.6 of the Standardised SPPA further stipulates liability for Liquidated Damages (LD) when COD was not achieved as scheduled. **Figure 3.4** compares the expected and actual delivery of renewable energy projects from the Financial Year 2021/22 to 2025/26.

Figure 3.4: Comparison of Planned Versus Actual Development of Renewable Energy (RE) Projects



Source: Auditors' Analysis on SPPAs between Developers and TANESCO from Financial Year 2021/22 to 2025/26, 2025

Analysis of **Figure 3.4** shows that a total of 29 renewable energy projects, with an expected capacity of 129 MW, were planned for development between 2021/22 and 2025/26. However, only eight projects, equivalent to 27% of those planned, were completed, delivering just 22 MW, equivalent to 17% of the anticipated capacity. Implementation has stagnated for a prolonged period. Notably, no projects were developed for three

consecutive years from 2022/23 to 2024/25. Development activity resumed only in 2025/26, when three projects were completed, contributing 12 MW. However, this accounted for only 17% of the expected capacity this year.

Generally, the performance trends indicate a consistent gap between planned and actual achievements, reflecting challenges in project execution and management, as detailed below.

Delays in the Development of Renewable Energy Projects

A review of project milestones was grouped into two categories: those already in operation (with construction completed) and those still under construction. The review revealed significant delays in implementing the renewable energy projects. In both categories, projects experienced delays. The details are explained below:

(i) Renewable Energy Projects in Operation Experienced Delays in Attaining Commercial Operation Dates (COD)

The audit of five projects in operation under SPPAs signed with TANESCO noted delays in attaining the Commercial Operation Dates (COD) during development, as detailed in **Table 3.7.**

Table 3.7: Delays in Attaining the Commercial Operating Dates

Financial Years	Number of Projects Commissioned	COD Delayed	Range of Delays (Min- Max Months)
2021/22	5	2	13 and 15
2022/23	0	0	0
2023/24	0	0	0
2024/25	0	0	0
Total	5	2	13-15

***Source*:** Auditors' Analysis on the SPPAs between Developers and TANESCO from Financial Year 2021/22 to 2025/26, 2025

Table 3.7 shows that, among the projects commissioned during the financial period 2021/22 – 2024/25, two of the five projects (40%) did not commence operations within the required COD, indicating project delays. The 2021/22 projects experienced delays of 13 and 15 months, notably, the

Ijangala and Madope hydropower projects. For more details, refer to **Appendix 6.**

(ii) Delays in Attaining the Commercial Operating Dates (COD) of the Ongoing Project Under Development Stages

The review of the EWURA's report on the Implementation status of the Approved SPPA (as of 30 April 2025) and the signed SPPA between TANESCO and the developer established the status of the projects initiated and ongoing during the audit period. The review revealed that some projects approved by EWURA did not proceed to SPPA signing, as outlined in **Table 3.8.**

Table 3.8: The Status of the Project under Development Stages

Financial Year	Number of Projects Initiated[9]	Number of Ongoing Projects[10]	Variance	Remarks
2021/22	3	1	2	The variation indicates that the projects, after approval by EWURA, did not proceed to the signing of the SPPA.
2022/23	15	13	2	
2023/24	21	17	5	
2024/25	9	7	2	
TOTAL	48	38	10	

Source: Auditors' Analysis on the Signed SPPA and EWURA Implementation Report as of 30 April 2025

Table 3.8 shows that between the Financial Year 2021/22 and 2024/25, a total of 48 projects were initiated and reached the EWURA approval stage. Of these, only 38 projects (79%) advanced to the signing of the Small Power Purchase Agreement (SPPA) between TANESCO and the developers, while 10 projects (21%) did not sign. The highest number of projects that did not proceed to SPPA signing was recorded in 2023/24. Furthermore, EWURA's implementation report (as of 30 April 2024) lacked updated information for the two projects initiated in the Financial Year 2021/22.

[9] The projects that were approved by EWURA to proceeded with the signing of the SPPA respective with Financial Year

[10] The projects for which the SPPA was signed based on the approval from EWURA

Moreover, a review of ongoing projects under the signed SPPA, based on the electricity generation capacity (in MW) expected to be delivered between 2021/22 and 2025/26, revealed delays in connecting the generated electricity to the grid, as detailed in **Table 3.9**.

Table 3.9: Number and Status of Renewable Projects under Development for the Financial Year 2021/22 – 2025/26

Financial Year	Number of Projects Approved by EWURA with Signed SPPA	COD Delayed	Range of Delays (Min- Max Months)	COD within the Time-frame	
				With Risk of Delay	Within Time
2021/22	2	1	55	0	1
2022/23	0	0	0	0	0
2023/24	3	3	13-22	0	0
2024/25	4	4	3-15	0	0
2025/26	12	0	0	5	7
Total	**21**	**8**	**3-55**	**5**	**8**

Source: Auditors' Analysis on the Signed SPPAs and EWURA's Report on the Implementation Status from Financial Year 2021/22 – 2025/26 and Approved SPPA between TANESCO and Project Developers, 2025

Table 3.9 presents the ongoing projects at development stages expected to generate electricity from the Financial Year 2021/22 to 2024/25. Of the 21 projects that signed SPPAs, 8 (38%) experienced delays in reaching their COD. Similarly, 5 projects (24%) were at risk of delay due to the limited time remaining and the slow pace of implementation. Further details of the renewable energy under development are shown in **Appendix 7.**

Moreover, only 4 out of the 13 projects (30.8%) that were delayed or at risk of delay had formal amendments to their agreements extending their COD. However, only one project signed the amendment before the COD deadline expired. The remaining three projects signed their amendments late, with delays ranging from 5 to 23 months. The remaining 10 delayed projects had no formal amendments, rendering their agreements void and unenforceable under Rule 39(3) of the Electricity (Development of Small Power Projects) Rules, 2020.

The delay in attaining the Commercial Operation Date (COD) for both completed projects that experienced delays and the ongoing projects under development was attributed to the following factors:

(i) Delay in Financial Closure

The review of the EWURA's Project Implementation Report dated April 30, 2025, and TANESCO's Report dated 31 July 2025 noted that five of the eight delayed projects experienced setbacks due to financial challenges. By the time this Audit was conducted, these projects were still in the process of securing funds. The financing difficulties constrained cash flow and affected the timely execution of works.

Furthermore, a review of project amendments, specifically Amendment No. 1 to the SPPA between TANESCO and Pinyinyi HPP (Ninety-Two Company Ltd), showed that the developer had raised concerns about failing to achieve the Commercial Operation Date (COD) because of delays in securing funds and, therefore, requested an extension of time to meet the COD requirement.

Additionally, according to EWURA, all SPPAs signed to date were developed by private entities that solicit funds from various financing institutions, both locally and internationally. Very few developers have achieved financial closure on time, developed projects, and integrated them into the grid within the specified COD period in the SPPA.

(ii) Inadequate Monitoring of the Renewable Energy Projects

The audit noted that eight delayed renewable energy projects did not submit their quarterly progress reports to the authority. This contravenes Rule 39(2) of the Electricity (Development of Small Power Projects) Rules, 2020, which mandates the quarterly submission of progress reports for effective monitoring of renewable energy projects. Consequently, this lack of regular tracking limited EWURA's ability to identify potential challenges that could delay the project.

Furthermore, the delayed renewable energy projects did not submit the annual implementation plan required by addendum 12 of the Inspection Manual for Electricity Regulated Activities, 2024, which requires developers

to submit a development plan annually. In addition, a review of the Inspection Manual for Electricity Regulated Activities (2024) revealed that it does not provide clear guidance on the required interventions following developers' progress report submissions. Specifically, the Manual lacks provisions for evaluating project status and its timelines, identifying risks, tracking progress, issuing recommendations, and conducting follow-up actions.

(iii) Omission of the Liquidated Damage (LD) Clause in the SPPA Terms for the Delayed Projects

The audit noted that signed SPPAs between TANESCO and developers omitted the Liquidated Damages (LD) clause, contrary to Para 3.6 of the Standardised Power Purchase Agreement under the Electricity (Development of Small Power Projects) Rules, 2020. These rules require sellers who fail to achieve COD to pay LD, unless an extension is agreed to for completing construction, testing, and commissioning.

The omission stemmed from a clause allowing modification of SPPA terms. Although EWURA amended Rule 8 of the Electricity (Development of Small Power Projects) Rules, 2020, in 2025 to restrict such changes, the absence of LD limited TANESCO's ability to enforce accountability for delays.

Of the eight projects reviewed, four had COD extensions, while the other four did not. TANESCO did not levy Liquidated Damages charges totalling USD 330,000, weakening its enforcement mechanism. The audit found that signed SPPAs between TANESCO and developers did not include provisions for the Liquidated Damages (LD), contrary to the requirements of Para 3.6 of the Standardised Power Purchase Agreements of the Electric Energy from a generation facility on the third schedule of the Electricity (Development of Small Power Projects) rules, 2020. These rules require that a seller who does not achieve COD be liable to pay LD unless both parties agree on an extension for the explicit purpose of completing the construction, testing, and commissioning of the facility.

The omission of Liquidated Damages (LD) is attributed to a clause in the SPPA that permits modification of its terms. The absence of the LD in the signed SPPA limits TANESCO's ability to hold the developer accountable for the project delays. However, for those projects without an agreed extension

of time, they were liable to be charged LD as per the requirements of Para 3.6.1 of the SPPA, which stipulates that the seller is required to pay the purchaser US$2.5 per kW of the contracted capacity per month for each day of delay beyond its COD. A comparison of delayed projects against the LD charges is provided in **Table 3.10.**

Table 3.10: Comparison of the Delayed Projects against the LD Charges

Project	Capacity (MW)	Delay (Months)	LD(USD)
Luponde Hydro Ltd	2	10	50,000
Bugando Natural Energy Ltd	5	14	175,000
ZBS Investment Ltd (Nyasoro)	8	3	60,000
ZBS Investments Ltd (Mdunku)	6	3	45,000
Total			330,000

Source: Auditors' Analysis on the Signed SPPA, 2025

(iv) Absence of the Signing Timelines for the SPPAs in the Framework

A review of EWURA's implementation status report (as of 30 April 2025) and the approved SPPAs between TANESCO and project developers revealed that TANESCO delayed signing of the agreements even after the EWURA Board had granted approval, without providing justification for the delays. This is contrary to Rule 35(3) of the Electricity (Development of Small Power Projects) Rules, 2020. This rule requires the SPPA agreements to be concluded within the valid period of the letter of intent after the DNO has delivered a detailed statement of interconnection costs to the small power project developer.

This was evidenced by the report, which included letters from developers informing the TANESCO authority of delays in signing SPPAs, particularly for the Solar PV projects in Kogwa, Igunga, and Mbarali. Furthermore, the audit noted the absence of a clear timeline empowering EWURA to compel TANESCO to sign an SPPA within a specific period after regulatory approval. This regulatory gap has led to inconsistent practices, as summarised in **Table 3.11**.

Table 3.11: Timeline of the Signing of the SPPA after the EWURA Approval

Interval of Months Taken to Sign SPPA after Approval	Number of Projects	Percentage (%)
Signed before approval of the authority	5	13
Less than 3 months	20	53
3-6 months	6	16
Greater than 6 months	7	18
Total	38	100

Source: Auditors' Analysis of Signed SPPAs and EWURA's Report on Implementation Status as of 30 April 2025

Table 3.11 shows that out of the 38 projects approved by EWURA and with signed SPPAs, the majority (20 projects) (53%) were signed within 3 months. However, 7 projects (18%) took more than 6 months, with 2 experiencing extreme delays of 30 and 32 months before they were signed. In addition, 5 projects were found to have signed their SPPAs before EWURA's official approval date. This highlights the absence of a clear benchmark or enforcement mechanism for SPPAs timelines.

It was noted that delays in attaining the Commercial Operation Date (COD), driven by financing challenges, inadequate monitoring, and the omission of Liquidated Damages (LD), directly hindered the timely integration of renewable energy into the national grid.

As a result, EWURA was unable to detect and address implementation challenges, resulting in delays in connecting completed projects to the grid. For example, Madope HPP and Nishati Lutheran (DKK), initially scheduled for commissioning in June 2022, were only integrated in July and September 2023, respectively, delaying the contribution of 3 MW to national power generation targets.

In addition, ongoing construction projects faced similar setbacks. Eight delayed projects represent 51 MW of renewable energy capacity that could have been added earlier. Delays in integrating generated power resulted in stalling of progress toward renewable energy expansion and weakened achievement of national energy security targets. Furthermore, Para 3.6 of the SPPA highlights the risk of automatic termination if COD is not achieved, exposing TANESCO and developers to contractual and operational risks.

(b) Inadequate Implementation of the Power Evacuation of JHNPP

It was noted that the power evacuation infrastructures for JNHPP were not completed, hindering the utilisation of installed generation capacity and the stabilisation of the national grid. According to the Power System Master Plan (PSMP 2020 and its 2024 update), the timely construction of transmission infrastructure is a critical factor in ensuring the efficient evacuation of power from generation plants and enabling the integration of new renewable energy sources.

According to the PSMP Updates (2024) and the progress report as of December 2025, the construction of the Chalinze–Dodoma 400 kV transmission line, a key evacuation corridor for JNHPP, had reached 55.37% of completion, with an expected completion date of September 2026. Furthermore, during the factual clearance meeting with the officials from the Ministry of Energy, it was noted that TANESCO is currently negotiating with the contractor to accelerate completion of construction work to June 2026. It was further noted that the Ministry of Energy is implementing the Chalinze–Mkuranga 400 kV transmission line, which will further enhance power evacuation from the JNHPP, and that the project has reached 48.07% progress and is expected to be completed by November 2026.

However, the audit noted that, PSMP 2020 targeted completion of the Chalinze–Dodoma and Chalinze–Kinyerezi transmission lines by 2022. This delay has directly constrained power evacuation from the Julius Nyerere Hydropower Project (JNHPP). Despite the project being completed and operational, the existing transmission infrastructure has not been able to evacuate the entire installed capacity of 2,115 MW. As of December 2025, only four turbines were operational, generating approximately 940 MW, while five turbines, representing about 55% of the installed capacity, remained on standby due to insufficient evacuation capacity to the main grid.

The delayed completion of power evacuation infrastructure at the JNHPP is attributed to inadequate funding for the completion of the designed transmission line projects. As a result, the JNHPP has been unable to evacuate its optimal generation capacity to meet system demand when required, leaving 1,175 MW of installed capacity on standby, equivalent to five turbines, each with an installed capacity of 235 MW.

Furthermore, at the Kihansi Hydropower Plant, maintenance of one turbine has been delayed for more than 12 months because it requires a complete shutdown of the entire plant. Doing so would cause voltage instability in Tanzania's southern grid, which involves stabilisation from another large power plant, originally intended to be the Julius Nyerere Hydropower Project (JNHPP).

(c) Underdevelopment of the Upper Kihansi Segment

Review of the PSMP 2020 noted that the Kihansi Hydropower Plant was commissioned in 2000, with only the Lower Kihansi component developed, while the Upper Kihansi reservoir was not constructed. The original plant design was intended to have a total installed capacity of 300 MW, achieved with five 60 MW turbines. However, only three turbines were installed at Lower Kihansi, leaving provision for two additional turbines planned for construction from the Upper Kihansi reservoir.

During the audit team's site visit, it was noted that preparatory work for Upper Kihansi has been partially undertaken. The powerhouse was designed to accommodate generation units. Similarly, a transformer intended for one of the Upper Kihansi turbines has already been installed, as indicated in **Photos 3.1** and **3.2**.

Photo 3.1: Constructed penstocks that carry water from the reservoir, one from the lower Kihansi, and the other, which is not yet completed, is for Upper Kihansi.

Source: Photo taken by the Auditors on 15 September 2025 during a Site Visit

Photo 3.2: Transformer installed in one of the provisions for installing turbine No. 5 operating using the Upper Kihansi reservoir.

Source: Photo taken by the Auditors on 15 September 2025 during a Site Visit

However, construction of the reservoir and installation of the two turbines were not yet completed. Furthermore, during the factual meeting, interviews with Ministry Officials noted that the Ministry has planned to use the transformer as a backup spare in case of any fault affecting the operating generator at the Lower Kihansi facility.

A review of the Power System Master Plans (PSMPs) revealed inconsistencies and scheduling delays for this project. PSMP 2020 (**Table 3-20**) projected the completion of the Upper Kihansi development by 2026, with an estimated construction period of 45 months. However, PSMP 2024 (**Table 4-24**) revised the construction period to 60 months and projected the plant to be online by 2033. At the same time, PSMP 2024 (Appendix A: Detailed Generation Expansion Plan 2024–2050) lists the expected commissioning year as 2030. From this perspective, if a 60-month construction schedule is to be met, construction should have commenced by 2025. Nevertheless, as of the audit site visit in September 2025, no preparatory activities had begun on the Upper Kihansi development.

During the factual clearance meeting, interviews with Ministry of Energy officials noted that the Upper Kihansi project has two implementation phases. While Phase I was already completed, Phase II was halted due to identified environmental concerns, specifically the presence of protected frog species within the dam area. Furthermore, prolonged delays were compounded by community encroachment around the project site, which further hindered the continuation of the project.

Furthermore, despite the Ministry's efforts to restart the project, the development has remained stalled. The Audit noted that misalignment among the PSMP, the Ministry's Strategic Plan, and TANESCO's Corporate Strategic Plan has contributed to delays in the implementation of this project. While the PSMP sets clear targets and time frames for project implementation, these are not adequately translated into the Ministry's Strategic Plan or TANESCO's CSP, which guide the preparation of annual action plans. For example, the Ministry of Energy's Strategic Plan 2021/22–2025/26 (Para 2.2.5) lists flagship projects such as JNHPP, Ruhudji (358 MW), Rumakali (222 MW), and Kikonge (300 MW), but does not incorporate the Upper Kihansi development. Similarly, TANESCO's 10-Year Corporate Strategic Plan (2024/25–2034/35) omits the project, resulting in misalignment between institutional plans and PSMP targets.

Generally, Tanzania has continued to under-utilise its hydropower potential by leaving 120 MW, equivalent to 40% of the originally planned Kihansi capacity, underdeveloped. This has led to the presence of idle assets, including a transformer left unused for over two decades.

3.4.2 Unsolicited Procurement Dominates TANESCO's IPP Projects

The audit reviewed TANESCO's procurement of IPPs and noted that all projects were procured through an unsolicited procurement process. The audit further revealed that projects under development included in PSMP projections were also procured through unsolicited means.

Rule 4(a) of the Electricity (Development of Small Power Projects) Rules, 2020 stipulates that the Distribution Network Operator (DNO) has the ability to determine whether an area is strategic on its own motion. Nevertheless, Para 4.4.4 of the PSMP, 2024, identifies candidate projects for power generation with a potential capacity of 2,580 MW for hydro, 1,674 MW for

solar, and 3,050 MW for wind. Despite identifying these strategic areas, projects continue to rely on unsolicited procurement rather than solicited procurement aligned with the established strategic priorities.

In 2018, TANESCO prepared a Request for Qualification (RFQ) for competitive tenders for large solar PV and large wind power generation projects; however, the process did not mature to the stage of securing qualified bidders for the implementation of the renewable energy projects due to low interest from developers.

Furthermore, the review of SPPAs and Memoranda of Understanding (MoUs) between developers and TANESCO revealed that, from the Financial Year 2021/22 to 2024/25, 38 Projects Approved by EWURA with signed SPPA agreements were obtained through unsolicited procurement processes.

Additionally, the projects initiated under the PSMP 2024 were also implemented under unsolicited procurement. These projects included wind power projects with MoUs signed with Upepo Energy Partners Ltd and Akuo Energy SAS. For solar power projects, MoUs were signed with RP Global Italy SRL (to be implemented in Iringa) and Total Eren S.A. (to be implemented in Kisima, Dodoma).

The absence of competitive procurement processes was attributed to the current practice in which Independent Power Producers (IPPs) are the primary initiators of new power projects.

Implementation of the project through unsolicited procurement may expose the procurement process to risks of non-transparency and unfair practices, as projects are awarded without open competition. Additionally, reliance on unsolicited procurement may contribute to delays in project implementation, as proposals received may not align with the strategic timelines and priorities outlined in the Power System Master Plan (PSMP) 2024. Moreover, continued reliance on unsolicited procurement may create a disconnection with national energy planning.

3.4.3 Gaps in Monitoring and Evaluation of the Projects During Construction

The audit noted that no evaluation reports were prepared by EWURA, and site visits were not conducted at the projects during construction. However,

EWURA has been inspecting these projects only before issuing licenses or registrations, through a pre-licensing inspection when construction is completed. This is contrary to Section 31(1)(a) of the Electricity Act, CAP 131, and Section 78 of Electricity (Generation, Transmission and Distribution Activities) Rules, 2023, which requires EWURA to regularly inspect the construction of electricity facilities and works in order to monitor and assess compliance with the Act.

Moreover, the audit noted that the authority issued letters to acknowledge the submission of progress reports by developers, highlighting the issues identified in those reports. However, there was a gap in the evaluation of the submitted progress reports for all renewable energy projects. In addition, inconsistencies were observed in the updating of the project status for the renewable energy initiatives. A review of EWURA's documentation on the implementation status of the SPPA between TANESCO and the developers revealed that EWURA did not consistently monitor the progress of the renewable energy projects. Between 2021/22 and 2025/26, project status updates were recorded only twice, in September 2023 and again in April 2025.

The following were the factors that contributed to these shortcomings:

(a) Provisional Licence of the Renewable Energy Project under Construction was not Mandatory

The audit noted that shortfalls in the licensing system for renewable energy projects in the Country included the absence of a provision in the Law declaring a provisional licence for a Renewable Energy Project under Construction mandatory. Section 12 of the Electricity Act, CAP 131, states that EWURA may issue a provisional licence. This shows that issuance of provision licensing was optional. This has resulted in the absence of a structured process within EWURA to track project implementation, review progress reports, and plan inspections for projects both with and without provisional licences.

(b) Not All Developers Submit Progress Reports and Implementation Plans

The audit noted that out of all 38 renewable energy projects only two projects submitted the quarterly progress reports from the Financial Year

2021/22 to 2024/25, as required under Section 39(2) of the Electricity (Development of Small Power Projects) Rules, 2020, which provides for quarterly reporting on progress toward the Commercial Operation Date (COD) to the Authority and the Distribution Network Operator. Similarly, developers under the VSPP framework did not submit quarterly progress reports from 2021/22 to 2024/25 as required by Rule 6(1) of the Electricity (Development of Small Power Projects) Rules, 2020.

Furthermore, the Audit noted that the submitted progress reports for the renewable energy projects were inadequate. The Suma HPP project was required to submit 11 quarterly progress reports, but submitted only 6. Likewise, the Luponde HPP project was required to submit six progress reports, but submitted only four.

Moreover, none of the 38 renewable energy projects submitted the annual implementation plan required by Para 12 of the Inspection Manual for Electricity Regulated Activities, 2024, which requires developers to submit a development plan annually.

This resulted in projects progressing without adequate regulatory oversight. Consequently, this limited EWURA's ability to identify and address challenges during project development, increasing the risk that the project would fail to meet quality and timeliness requirements, thereby contributing to the encroachment challenge. Furthermore, interviews with officials from the Ministry of Energy revealed that TANESCO had rejected several Independent Power Producer (IPP) projects for failing to meet development standards, as highlighted in the draft report *"Encroachment of IPP Infrastructures."*

3.4.4 Gaps in Witnessing the Testing of Generation Plants during Commissioning Activities of the Renewable Energy Projects

Review of the Pre-licensing/Pre-registration inspection report revealed that EWURA did not witness the testing of facilities during commissioning, contrary to Rule 38(3) of the Electricity (Generation, Transmission and Distribution Activities) Rules, 2023. The Rule requires a generation licensee to allow the Authority to witness testing to determine whether proper testing procedures are observed in accordance with the Power Purchase

Agreements, depending on whether the agreements are for increasing capacity, commissioning a new facility, or upgrading an existing facility.

Furthermore, Rule 18(1)(d) of the Electricity (Generation, Transmission and Distribution Activities) Rules, 2023 requires generation licensees to design, build, operate, and maintain their facilities in line with industry best practices (Prudent Utility Practices) and the obligations set out in their Power Purchase Agreements. Since compliance with Prudent Utility Practices was an obligation of the licensee, the regulator also has the responsibility to ensure that facilities meet these standards. Therefore, EWURA has a regulatory obligation to witness commissioning activities, in addition to being allowed to do so by the developer.

Moreover, EWURA responded that the cited Rule obligates a licensee to allow EWURA to witness the testing and commissioning, but it is not mandatory that EWURA has to witness the exercise. Despite EWURA's response, there was no documented process for justifying EWURA's decision to either witness the testing of the plant or not.

Furthermore, EWURA conducts inspections of all projects before granting registration, in accordance with Annex 2 of the Inspection Manual for Electricity Regulated Activities, 2024, which guides pre-licensing and pre-registration inspections.

Generally, the review showed that although inspections were required before granting a licence or registration, approval decisions during the audit period (2021/22–2024/25) were primarily based on document review rather than field-witnessed tests. The EWURA Inspection Manual of 2024 also lacked clarity on which documents to submit before witnessing testing and commissioning processes.

Further details regarding the projects inspected before granting a license are in **Table 3.12**.

Table 3.12: Status Regarding Projects Pre-Licensing Inspections

Project (MW)	License Status	Source (Capacity MW)	Remarks
BXC Solar Project- Kayenze Village	Not Granted	Solar (5MW)	Testing and commissioning reports were not submitted.
Lungali Natural Resources	Not Granted	Hydro (1.2MW)	Testing and commissioning reports were not submitted.
Mkulanzi Project	Granted	Biomass (15MW)	All documents were submitted, but no evidence of EWURA witnessing the test.
Tanzania Portland Cement Ltd	Granted	Solar (12MW)	All documents were submitted, but no evidence of EWURA witnessing the test
Mtibwa Sugar	Not Granted	Biomass (15MW)	Testing and commissioning reports were not submitted.
Kagera Sugar Ltd	Granted	Biomass (27MW)	All documents were submitted, but no evidence of EWURA witnessing the test.

***Source*:** Auditors' Analysis on the Pre-licensing Inspection Reports, 2025

Table 3.12 indicates that EWURA did not conduct testing, and commissioning decisions were primarily based on submitted documents rather than direct verification of commissioning tests. For example, licensed projects such as Tanzania Portland Cement Ltd and the Mkulazi Biomass Project were approved based solely on documentation, without on-site validation of the test results. This practice increases the risk of integrating non-compliant or underperforming facilities into the electricity system.

Furthermore, a review of the pre-registration reports for the projects below 1MW, that required registration, indicated that only the Jumeme Solar Power Project in Rwazi Village was inspected before registration was granted. The authority's inadequate supervision during commissioning was attributed to the lack of a framework and detailed guidelines in the Inspection Manual, specifying the documents developers must submit before commissioning and inspection.

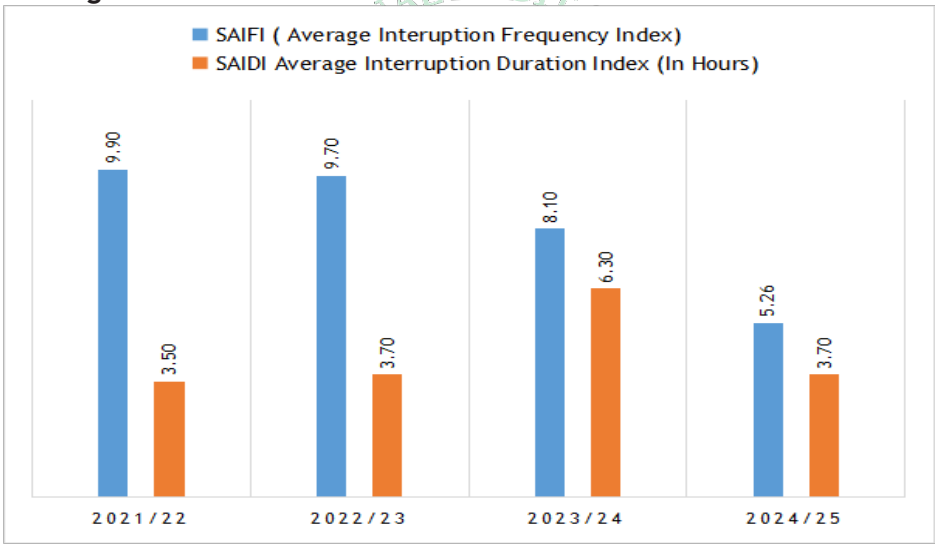
As a result, an estimated 75MW of installed capacity (from 6 reviewed projects) was commissioned without field verification. This increases the

risk of integrating non-compliant infrastructure into the electricity network, limiting the potential for grid acquisition and raising concerns about technical safety and compliance.

3.5 Inadequate Operational Activities of the Renewable Energy Projects

This section assesses the operation of the renewable energy plants and their associated transmission infrastructure for power evacuation, which has effectively supported the reliable, consistent, and sustainable delivery of electricity. The audit noted that the national grid transmission reliability metrics remained within acceptable regulatory limits, with SAIFI maintained below 10 interruptions and SAIDI below 6.5 hours from Financial Year 2021/22 to 2024/25, as indicated in **Figure 3.5**.

Figure 3.5: Transmission Infrastructure Performance Indicators



Source: EWURA Performance Report from the Financial Year from 2021/22 to 2024/25 as of March 2025

Figure 3.5 presents the performance of transmission infrastructure based on SAIFI and SAIDI indicators from Financial Year 2021/22 to 2024/25 (as of March 2025). The SAIFI shows a consistent decline from 9.9 interruptions per customer in 2021/22 to 5.26 in the third quarter of 2024/25, indicating an improvement in interruption frequency. In contrast, SAIDI increased from 3.5 hours in 2021/22 to a peak of 6.30 hours in 2023/24, then declined to

3.7 hours in the third quarter of 2024/25. This reflects fluctuating performance in interruption duration over the period.

Furthermore, the audit noted that power generation increased from the Financial Year 2021/22 to 2024/25, mainly due to the commissioning of four turbines at JNHPP, which commenced operations in September 2025. However, the plant's scheduled operation time frames were not met, as indicated in **Tables 3.14** to **3.17**.

Table 3.13 details the gaps in attaining operational capacity for hydro projects.

Table 3.13: Operational Capacity Shortfalls of Hydro Power Projects

Financial Year	Planned Installed Capacity (MW)	Actual Operational Capacity (MW)	Percentage Achievement	Variance (MW)	Remarks
2021/22	2,149.0	-	0	2,149.0	No operation from planned capacity
2022/23	-	-	-	-	
2023/24	49.5	-	0	49.5	
2024/25	358.0	-	0	358.0	
Total	**2,556.5**	**-**	**0**	**2,556.5**	

Source: Auditors' Analysis on PSMP 2020 and PSMP 2024, 2025

Table 3.13 indicates that although 2,556.5 MW of hydropower generation capacity was planned for commissioning during the period, none of the projects became operational within the scheduled timelines. Consequently, no target was achieved, reflecting a total variance of 2,556.5 MW.

Table 3.14 provides details on the gaps in the attainment of operational capacity of solar projects.

Table 3.14: Operational Capacity Shortfalls of Solar Projects

Financial Year	Planned Installed Capacity (MW)	Actual Operational Capacity (MW)	Percentage Achievement	Variance (MW)	Remarks
2021/22	-	-	-	-	No operation from planned capacity
2022/23	150	-	0	150	
2023/24	55	-	0	55	
2024/25	-	-	-	-	

Source: Auditors' Analysis on PSMP 2020 and PSMP 2024, 2025

Table 3.14 indicates that despite the planned installation of 205 MW (150 MW in 2022/23 and 55 MW in 2023/24), no solar project became operational within the period under review. Consequently, the achievement rate remained at 0 per cent, with a cumulative variance of 205 MW between the planned and realised capacities. **Table 3.15** provides details on the gaps in attaining operational capacity for wind projects.

Table 3.15: Operational Capacity Shortfalls of Wind Projects

Financial Year	Planned Installed Capacity (MW)	Actual Operational Capacity (MW)	Percentage Achievement	Variance (MW)	Remarks
2021/22	-	-	-	-	No operation from planned capacity
2022/23	-	-	-	-	
2023/24	-	-	-	-	
2024/25	100	-	0	100	

Source: Auditors' Analysis of PSMP 2020 and PSMP 2024, 2025

Table 3.15 shows the planned and actual operational capacity for wind energy projects over the Financial Years 2021/22 to 2024/25. The 100 MW of wind power was scheduled for commissioning in 2024/25 under the PSMP 2020. However, no wind project became operational during the review period. As a result, the achievement rate remained at 0 per cent, with a total variance of 100 MW.

Table 3.16 provides details on the gaps in attaining operational capacity for geothermal projects.

Table 3.16: Operational Capacity Shortfalls of Geothermal Projects

Financial Year	Planned Installed Capacity (MW)	Actual Operational Capacity (MW)	Percentage Achievement	Variance (MW)	Remarks
2021/22	-	-	-	-	No operation from planned capacity
2022/23	35	-	0	35	
2023/24	60	-	0	60	
2024/25	-	-	-	-	

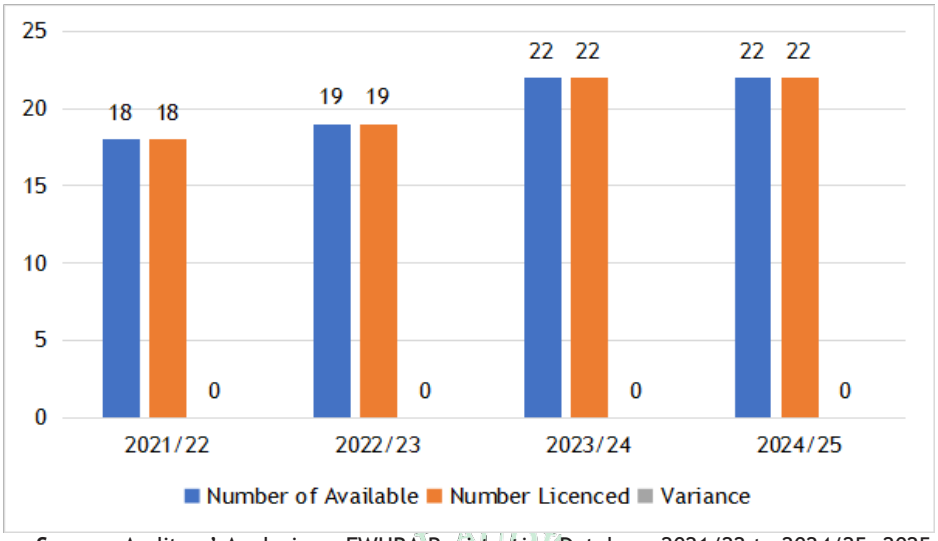
Source: Auditors' Analysis on PSMP 2020 and PSMP 2024, 2025

Table 3.16 shows the planned and actual operational capacity for geothermal energy projects over the Financial Years 2021/22 and 2024/25. A total of 95 MW of geothermal power was planned for commissioning, with 35 MW scheduled for 2022/23 and 60 MW for 2023/24, under the PSMP 2020. However, no geothermal project became operational during the review period. As a result, the achievement rate remained at 0 per cent, with a total variance of 95 MW. Generally, the audit noted the following shortfalls regarding the operation of renewable Energy Projects:

3.5.1 Inadequate Registration of Developers

A review of the Electricity License Database Status as of June 2025 and the Electricity Sub-Sector Regulatory Performance Report of March 2025 showed that EWURA had actively licensed and registered developers in the electricity sub-sector, as illustrated in **Figures 3.6** and **3.7**, respectively**.**

Figure 3.6: Licensed Power Plant Generating Electricity for Sale



Source: Auditors' Analysis on EWURA Registration Database 2021/22 to 2024/25, 2025

Figure 3.6 shows that between Financial Year 2021/22 and 2024/25, no new Power Plant of a developer was licensed.

Figure 3.7: Registered Power Plant Generating Electricity for Sale

Source: Auditors' Analysis on EWURA Registration Database 2021/22 to 2024/25 and Ministry of Energy Encroachment report, 2025

Figure 3.7 shows the number of registered developers from the Financial Years 2021/22 to 2024/25. In the Financial Year 2024/25, the number of registered Power Plants increased to 105, with 18 unregistered Power Plants.

Table 3.17: Application vs Registration of the Power Plants

Financial Year	Number Applied	Number Registered	Variance
2021/22	-	-	-
2022/23	-	-	-
2023/24	-	-	-
2024/25	36	36	-

Source: Auditors' Analysis on EWURA Registration Database 2021/22 to 2024/25, 2025

Table 3.17 shows that between the Financial Year 2021/22 and 2024/25, 36 applications were received (in 2024/25) and EWURA issued registrations to all of them. The Table further shows that in other Financial Years, no applications for registration of the power plants were received.

Despite the above registrations and licensing activities, the review of the 2025 Report on Encroached Off-Grid Entities Selling Electricity to Customers revealed that EWURA did not identify some mini-grid developers and therefore did not register them **(See Table 3.18)**. This is contrary to Section 8 of the Electricity Act, CAP 131, which requires EWURA to license entities engaged in electricity activities, including generation, transmission, distribution, supply, system operation, and electricity trade. However, under Section 18(3)–(4) of the Electricity Act, CAP 131, rural generation and off-grid distribution systems with an installed capacity or maximum demand of less than 1 MW are exempt from licensing. Instead of licensing, these require registration only. Therefore, activities above One Megawatt require a license, while those below One Megawatt require only registration. These unregistered projects are presented in **Table 3.18**.

Table 3.18: Renewable Energy Developers not Registered by EWURA

Project Area Mini Grid	District	Region	Village	Developer
Kangwena	Uvinza	Kigoma	Kangwena	Jumeme Rural Power Supply Ltd
Lagosa	Uvinza	KIGOMA	Lagosa	Jumeme Rural Power Supply Ltd
Ndele	Uvinza	Kigoma	Ndele	Jumeme Rural Power Supply Ltd
Tambusha	Uvinza	Kigoma	Tambusha	Jumeme Rural Power Supply Ltd
Buhingu	Uvinza	Kigoma	Buhingu	Jumeme Rural Power Supply Ltd
Mirui	Liwale	Lindi	Mirui	HUSK Power Systems Ltd
Lineng'ene	Liwale	Lindi	Lineng'ene	HUSK Power Systems Ltd
Malangali	Kilosa	Morogoro	Malangali	HUSK Power Systems Ltd
Maseyu	Morogoro	Morogoro	Maseyu	HUSK Power Systems Ltd
Namunda	Tandahimba	Mtwara	Namunda	HUSK Power Systems Ltd
Mchangani	Tandahimba	Mtwara	Mchangani	HUSK Power Systems Ltd
Kibundu	Bagamoyo	Pwani	Kibundu	HUSK Power Systems Ltd
Matipwili	Bagamoyo	Pwani	Matipwili	HUSK Power Systems Ltd
Lifakala	Mbinga	Ruvuma	Lifakala	Andoya
Mbangamao	Mbinga	Ruvuma	Mbangamao	Andoya
Kilimani	Mbinga	Ruvuma	Kilimani	Andoya
Isenzanya	Mbozi	Songwe	Isenzanya	HUSK Power Systems Ltd
Shitunguru	Mbozi	Songwe	Shitunguru	HUSK Power Systems Ltd

Source: Encroached Off-Grid Entities Report, 2025

This situation occurred mainly because EWURA lacked the capacity to track, monitor, and verify the operations of off-grid developers, particularly in remote rural areas. There were also delays in updating and harmonising the licensing database to reflect ground-level developments, as well as limited reporting from both local authorities and developers on newly established or expanded mini-grids.

As a result, developers operated outside the licensing framework, limiting EWURA's ability to enforce compliance with technical, safety, and tariff regulations. Customers served by unlicensed or unregistered mini-grids, without EWURA oversight, face the risks of unreliable supply, unfair pricing, and unsafe installations, and these practices contribute to inaccurate sector planning and reporting.

3.5.2 Absence of Battery Waste Management Systems in Renewable Energy Projects

Based on a review of correspondence files for the calendar years 2022-2025 regarding solar and wind projects, the audit found that all initiatives incorporating batteries lacked formal systems for collecting, storing, or disposing of batteries when they expired. This can also be evidenced through a review of Para 3.3.4 of the IRENA report, "Batteries and Secure Energy Transitions[11]," which highlights that current battery recycling and disposal services are insufficiently established in Africa.

On the other hand, during the site visit on 15 September 2025 at Bwisya, Bukoko, and Chefule, it was noted that at each site, there were three banks of batteries, each covering 24 batteries. Interviews with site technicians confirmed that at the Bwisya site, all three banks' batteries had already been replaced due to deterioration. Meanwhile, at the Chefule site, one battery bank had failed, further limiting storage capacity. However, arrangements for managing replaced batteries were not documented or demonstrated during the site visit.

This is contrary to Para 1.7 (b) (ii) of the Proposed Functions and Organisation Structure of the Energy and Water Utilities Regulatory Authority, of July 2020, which requires EWURA, through the electricity division, to ensure optimal provision of safety and environmental inputs to regulate the activities related to generation, transmission, distribution, market and supply of electricity.

The Audit noted during an interview with EWURA staff that EWURA had not put in place mechanisms to manage other types of batteries imported into

[11] *https://iea.blob.core.windows.net/assets/cb39c1bf-d2b3-446d-8c35-aae6b1f3a4a0/BatteriesandSecureEnergyTransitions.pdf*

the country and used beyond renewable energy electrification projects, such as those used in vehicles and industrial applications. Consequently, a tracking framework was not in place to indicate where batteries were installed, their duration of use, or their final disposal.

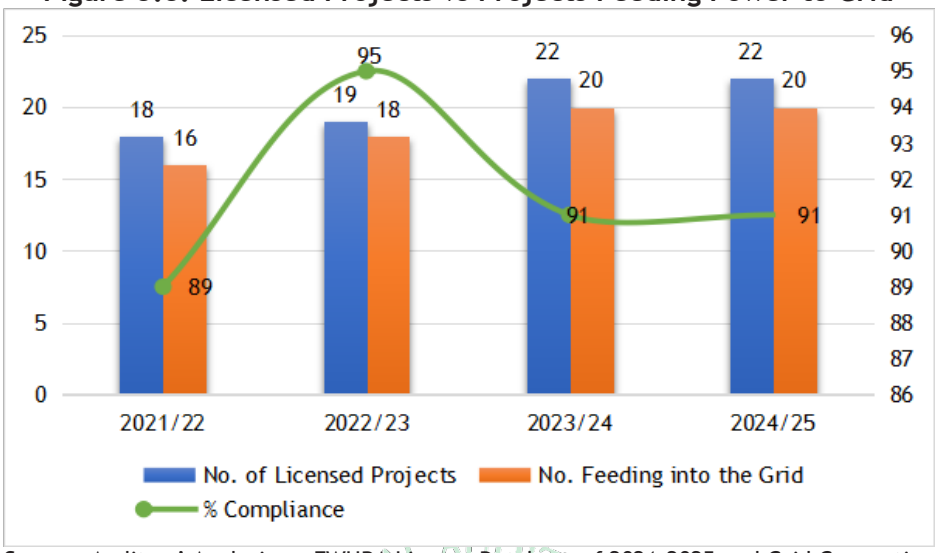
Furthermore, based on the Ministry of Energy's response on this matter, the audit acknowledges that the Ministry initiated measures to manage environmental and social risks associated with renewable energy development through the ongoing Strategic Environmental and Social Impact Assessment (SESIA). The audit further noted that this initiative, guided by national energy planning frameworks, was expected to inform the development of action plans, regulations, and technical guidelines for the safe handling, recycling, and disposal of renewable energy equipment, including spent batteries and solar panels.

The absence of a comprehensive battery management framework has increased the risk of hazardous waste accumulation across project sites, garages, and communities. In addition, this created potential environmental pollution through soil and water contamination by heavy metals and acids, and threats to human health in surrounding communities.

3.5.3 Ineffective Generation and Grid Feed-in by Licensed Renewable Energy Projects

During the period under review, EWURA licensed energy generation projects to 22 active developers as of June 2025, as indicated in **Figure 3.8.**

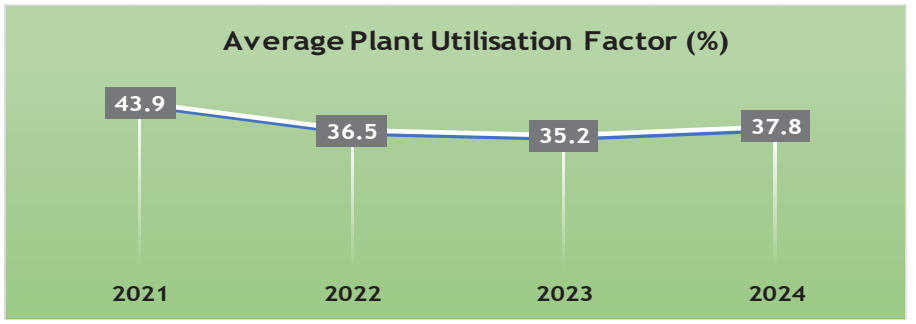
Figure 3.8: Licensed Projects vs Projects Feeding Power to Grid



***Source*:** Auditors' Analysis on EWURA License Database of 2021-2025 and Grid Generation Reports 2021-2025, 2025

According to **Figure 3.8**, the number of licensed projects increased from 18 in 2021/22 to 22 in both 2023/24 and 2024/25. The number of projects feeding into the grid also remained high, ranging from 16 to 20 over the four years. Compliance levels, expressed as percentages ranging from 89 to 95%, peaked in 2022/23. **Figure 3.9** provides details on the licensed project's plant utilisation in feeding power to the Grid.

Figure 3.9: Licensed Project's Plant Utilisation in Feeding Power to the Grid



***Source*:** Auditors' Analysis on EWURA License Database of 2021-2025 and Grid Generation Reports 2021-2025, 2025

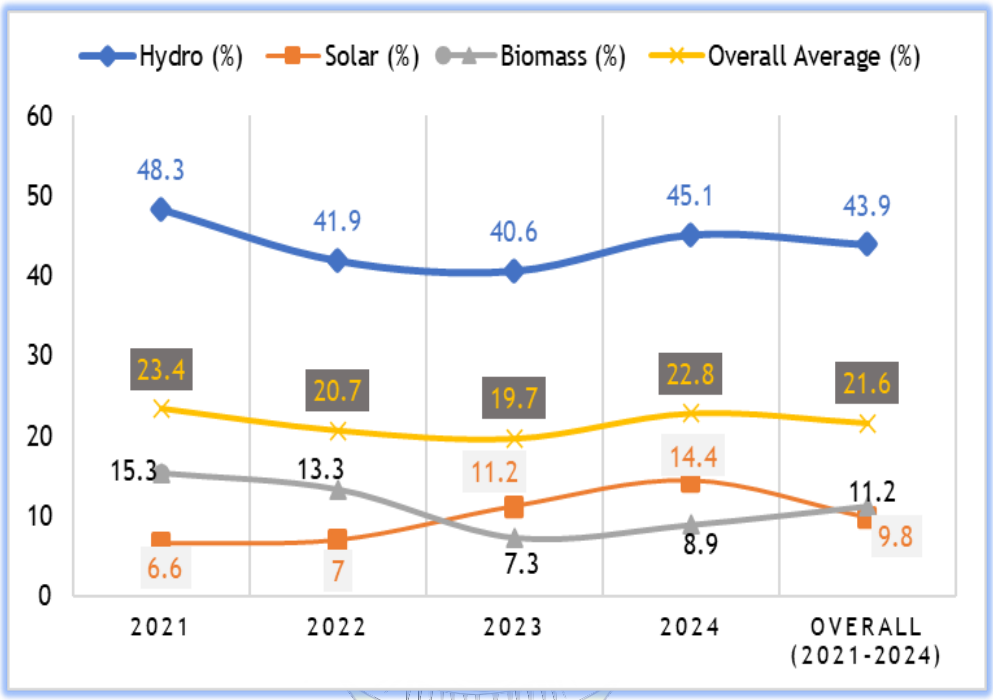
Figure 3.9 shows the analysis of EWURA's licensing and grid generation data, which reveals a decline in average plant utilisation from 43.9% in 2021 to 35.2% in 2023, followed by a slight increase to 37.8% in 2024. The overall mean utilisation for the period was 38.35%. This decline indicates reduced generation efficiency and under-utilisation of installed renewable capacity. This is contrary to Section 13 of the Electricity Act, CAP 131, which requires the licensee to generate, maintain facilities, and provide reliable generation services to customers. The performance gaps in plant operations are further described below.

a) Unreliable Renewable Energy Generation due to Variations in Plant Utilisation

It was noted that the performance of renewable energy plants, as measured by plant utilisation, showed significant variation over the period from 2021 to 2024. Plant utilisation reflects the ratio of actual generation to the maximum possible output if the plant operated at full capacity throughout the year and therefore serves as a key indicator of efficiency, reliability, and utilisation of installed capacity.

Figure 3.10 presents the mean and Standard Deviation of Utilisation Capacity for each plant.

Figure 3.10: Utilisation of Power Generating Plants



Source: Auditors' Analysis on EWURA Renewable Energy Generation Report 2021-2024, 2025

As shown in **Figure 3.10,** hydropower plants recorded the highest average utilisation rates, ranging from 40% to 48%, confirming their significant contribution to renewable energy generation. In contrast, solar and biomass projects consistently demonstrated low utilisation levels, averaging below 15% throughout the period, indicating limited operational efficiency and a modest contribution to the energy mix. The overall average utilisation of 21.6% indicates that, despite increased installed capacity, the renewable energy sector remains underutilised.

A further analysis of plant-level data, as shown in **Appendix 8,** indicated a standard deviation (SD) and a Coefficient of Variation from the Mean Generation, along with remarks from generating plants, confirming uneven performance among facilities. Plant utilisation was analysed over time; its mean value indicates the average level of performance, while the standard deviation shows how much the plant's utilisation fluctuates from that average.

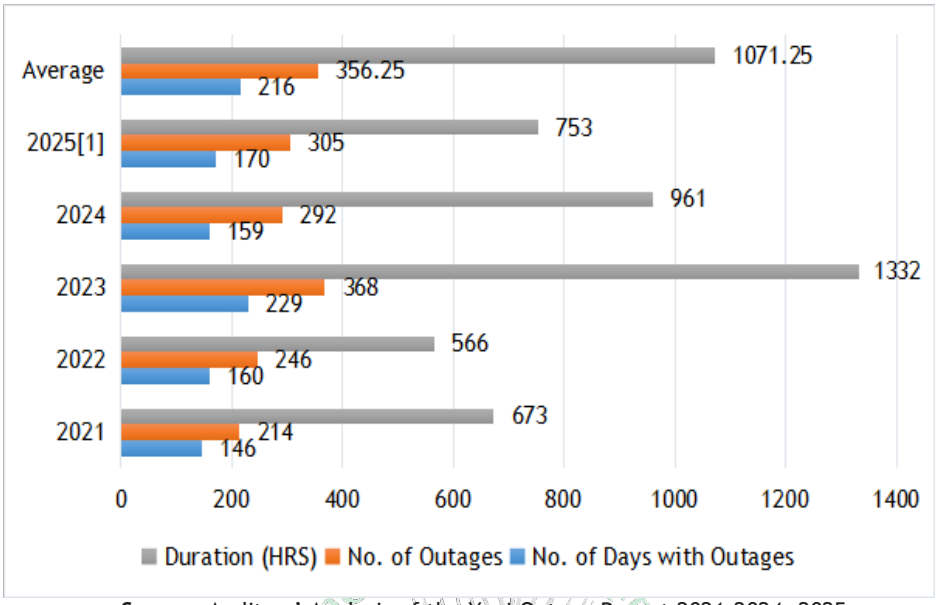
For instance, TPC Power Plant (mean Plant Utilisation of 15.2%, Standard Deviation of 2.0) and NextGen Solawazi Solar (mean Plant Utilisation of 9.8%, Standard Deviation of 3.7) demonstrated relatively stable performance across the years, indicating consistent utilisation of installed capacity. In contrast, major hydropower plants exhibited wide fluctuations, including Mtera (mean Plant Utilisation of 71.8%, Standard Deviation of 18.8), Nyumba ya Mungu (mean Plant Utilisation of 58.3%, Standard Deviation of 29.2), and N/P Falls (mean Plant Utilisation of 44.3%, Standard Deviation of 18.5). This variability indicates a high degree of operational uncertainty.

The results show that while national renewable energy generation increased significantly from 2,573 GWh in 2023 to 6,125 GWh in 2024, output stability remains a concern. Over-reliance on hydropower, coupled with pronounced variability in plant utilisation, increases vulnerability to seasonal water flows and climate variability. The absence of consistent contribution from other renewable technologies, particularly wind and solar, further compounds the risk of energy insecurity.

b) Outages at Yovi Hydropower Plant Undermining Generation Performance

During the site visit to Yovi Hydropower Plant, the audit noted significant outages affecting the plant's operational performance over the period from 2021 to 2025 as indicated in **Figure 3.11**.

Figure 3.11: Yovi Hydropower Plant Outage



Source: Auditors' Analysis of the Yovi Outage Report 2021-2024, 2025

Interviews with Yovi plant officials revealed that the outages were caused by inadequate maintenance of transmission lines by TANESCO. As a result, the plant has frequently tripped and been disconnected from the grid.

Since the plant's design configuration lacks black-start capability, it relies on drawing power from TANESCO's grid to re-energise. This dependency delays restart operations, thereby prolonging the duration of each outage.

As a result, outage days and hours increased significantly, particularly in 2023, when the plant recorded 1,332 hours of downtime across 368 incidents. These repeated interruptions reduced the plant's availability, undermined operational efficiency, and resulted in lost revenue from unreleased energy, as generation could not occur during outage periods. The existence of such outages indicates problems with transmission infrastructure maintenance and with coordination between TANESCO and independent small power producers (SPPs). Consequently, these reduce the plant's capacity to contribute to the national targets for generating an adequate energy mix in the Country.

c) One Turbine Out of Service for More than Nine Months at Kihansi Power Plant

During the site visit to Kihansi Hydropower Plant, it was observed that although three turbines were installed, only two were operational. At the same time, Turbine No. 3 remained out of service since December 2024 due to a fault caused by water leakage into the turbine, as shown in **Photo 3.3.**

Photo 3.3: Turbine No. 3 is out of service at Kihansi Power House.

Source: Photo taken by the auditors on 15 September 2025, during a site visit at Kihansi Power House

Interviews with TANESCO officials at the plant revealed that restoring Turbine No. 3 required major maintenance, including a complete plant shutdown and draining the reservoir. This process was estimated to take approximately six months. However, such an extended shutdown would cause voltage instability in southern Tanzania. The officials further explained that the planned mitigation measure was to stabilise the supply by evacuating power from the Julius Nyerere Hydropower Project (JNHPP) via the Dodoma Zuzu substation. At the time of the audit, however, the power evacuation infrastructures from JNHPP to Dodoma were still under construction.

The Audit noted that the prolonged outage of Turbine No. 3 has led to underutilization of the Kihansi Plant, thereby reducing its contribution to national generation targets and undermining the achievement of the renewable energy mix objectives.

d) Unreliable Power Supply at Ukerewe by Jumeme

During site verification at Ukara Island, Ukerewe District, it was observed that Jumeme Rural Power Supply was operating three solar mini-grids at Bwisya, Bukoko, and Chefule, each with an installed capacity of 60 kW, for a total of 180 kW. The plants, commissioned in 2018, were designed to provide a 24-hour electricity supply to the island communities.

However, during an interview with a Jumeme official, it was noted that the power supply was currently limited, lasting only from 10:00 a.m. to 8:00 p.m. daily, with frequent evening cut-offs. This situation has been attributed to the lack of a battery energy storage system for nighttime use. Further interviews with the Jumeme official revealed that batteries at the Bwisya site had already been replaced due to deterioration. In contrast, at the Chefule site, one battery bank had failed, further limiting storage capacity.

Furthermore, the review of the EWURA inspection report for the Mara, Mwanza, Geita, and Kagera regions, conducted from April 21 to 30 April 2024, noted that Jumeme faced operational performance deficiencies and reporting challenges in its operations, as indicated in **Table 3.19.**

Table 3.19: Inspection Report on Jumeme Compliance

Condition	Due Date	Status
By 31st December 2022, Jumeme shall submit a revised business plan that incorporates the approved tariffs	31/12/2022	Not Complied
By 31st January 2023, Jumeme shall submit a Customer Service Charter for review and approval	31/01/2023	Not Complied
By 30th June 2023, Jumeme shall improve its electricity services for better service to its customers	30/06/2023	Not Complied
Jumeme shall provide EWURA with information on its financial and operating conditions, as required by EWURA.	Continuous	Not Complied

***Source*:** Auditors' Analysis on EWURA Compliance Inspection Report 2024, 2025

Table 3.19 shows Jumeme's compliance status, indicating that four EWURA recommendations were not complied with until the time of writing this report. The review of Jumeme's correspondence file at EWURA noted that no report was submitted as recommended by EWURA, and that no follow-up was conducted thereafter.

Furthermore, the report assessed performance parameters related to electricity generation and power reliability, including Power Loss, the annual SAIFI (System Average Interruption Frequency Index), the annual SAIDI (System Average Interruption Duration Index), and the annual CAIDI (Customer Average Interruption Duration Index). **Table 3.20** provides details on the power reliability indicators assessment during EWURA's compliance inspection at Jumeme.

Table 3.20: Assessment of Power Reliability Indicators during the Compliance Inspection by EWURA at Jumeme

Name of Parameter Assessed	Actual value	Performance Benchmark	Percentage Deviation from Benchmark
Power Loss	67%	12%-14%	378
SAIFI (interruptions per customer per year)	204	under 3	6,700
SAIDI (minutes per customer per year)	86,935, 650	under 650	13,274
CAIDI (minutes per interruption event per year)	453	under 4	11,225

Source: Auditors' Analysis on EWURA Compliance Inspection Report 2024, 2025

Table 3.20 shows the performance of Jumeme in power generation and supply to the community in 2024. The analysis indicates that key reliability indicators, Power Loss, SAIFI, SAIDI, and CAIDI, deviated significantly from their benchmark values. Power losses reached 67%, exceeding the acceptable limit of 14%. Meanwhile, interruption frequency (SAIFI), duration (SAIDI), and restoration time (CAIDI) all exceeded benchmarks by thousands of percentages. These extreme deviations highlight severe inefficiencies and unreliability in power generation and supply by this plant.

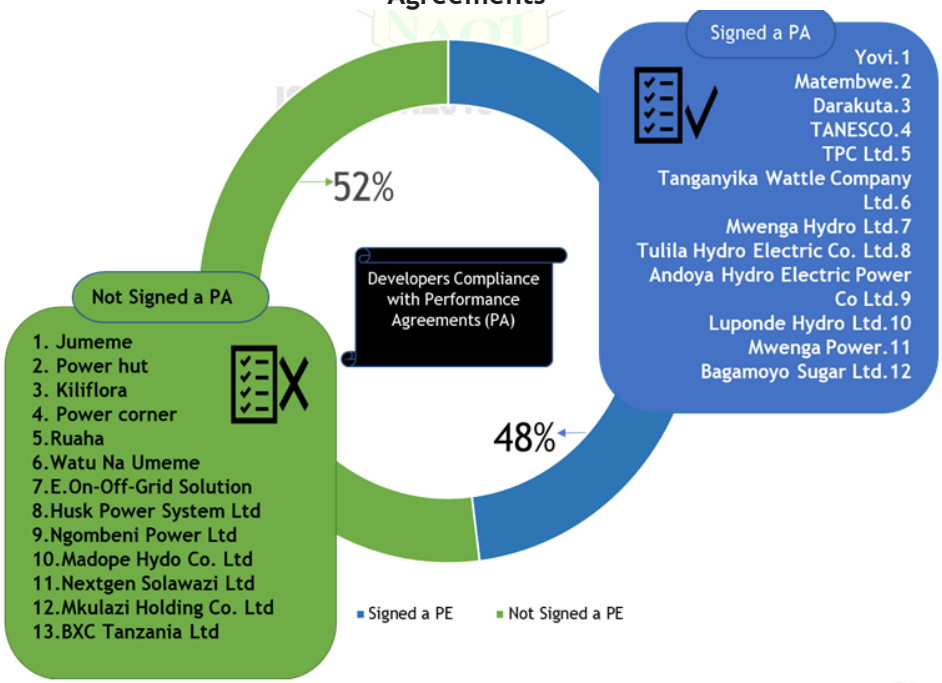
An interview with a village leader in Bwisya Village further confirmed the unreliability of electricity, with irregular daytime supply and non-availability at night. This situation is different from that of the commissioning period, when supply was available around the clock. Power was now restricted to daytime hours. Hence, through interviews, it was noted that the lack of reliable power led to the closure of small businesses, such as grain milling operations, and reduced the initially expected socio-economic benefits from the mini-grids.

At Jumeme headquarters, management acknowledged the challenge, citing tariff and cost-recovery issues, as well as the absence of additional storage investment, as key factors limiting system expansion. As a result, the Ukara Island mini-grids were performing below the objectives set in the performance agreements. These objectives included: providing reliable, continuous electricity generation of 4,320 kWh; maintaining power losses below 14%; achieving SAIFI of fewer than 3 interruptions per customer per year; SAIDI of fewer than 650 minutes per customer per year; and CAIDI of fewer than 4 minutes per interruption event.

3.5.4 Inadequate Receiving and Reviewing of Performance Reports from Developers

Upon reviewing the Developers' correspondence files, it was noted that, as of June 2025, EWURA had signed Performance Agreements with only 12 developers out of the sampled 25, as shown in **Figure 3.12**, who are required to submit quarterly performance reports to the Authority. This is contrary to Section 14(5)(d) of the Electricity Act, CAP 131, which obligates every licensee to sign a Performance Agreement with EWURA. Similarly, Para 5.3(e) of EWURA's Client Service Charter requires the Authority to oversee sector performance by reviewing and issuing feedback on quarterly and annual reports from service providers within 21 days of receiving complete reports.

Figure 3.12: Status of Developer Compliance with Performance Agreements



Source: Auditors' Analysis on Signed Performance Agreements, 2025

Key

✓ *signed a Performance Agreement*

✗ *Not signed a Performance Agreement*

Figure 3.12 presents the status of developers regarding the signing of Performance Agreements with EWURA. Out of 25 developers, 12 have signed, while 13 have not, resulting in a compliance rate of 48% and a non-compliance rate of 52%. Despite signing performance agreements with EWURA, the 12 developers were noted to have some shortfalls. These are discussed below.

Developers with a Performance Agreement did not Submit Reports

The review of key performance indicators in the performance agreements indicates that performance data were to be reported quarterly. However, this was not adhered to, as the review of correspondence files for developers who signed performance agreements with EWURA revealed that they did not submit their quarterly reports as required by the signed agreements, as indicated in **Table 3.21**.

Table 3.21: Developer's Performance Reports

Name of Developer	Date of the Signing of the Performance Agreements	No. of Quarterly Performance Reports due to EWURA by August 2025[12]	No. of Quarterly Performance Reports Submitted to EWURA	No. of Reports Reviewed by EWURA
Yovi	26 September 2024	3	0	0
Darakuta	24 October 2024	3	0	0
TANESCO	14 June 2024	4	1	1
TPC Ltd	18 October 2024	3	0	0
Tanganyika Wattle Company Ltd	18 September 2024	3	0	0
Mwenga Hydro Ltd	20 December 2024	2	0	0
Tulila Hydro Electric Plant Co. Ltd	24 September 2024	3	0	0
Andoya Hydro Electric Power Co. Ltd	19 September 2024	3	0	0
Mwenga Power	20 December 2024	2	0	0
Bagamoyo Sugar Limited	23 August 2024	4	1	1
Luponde Hydro Limited	23 December 2024	4	0	0
Matembwe Village Company	09 May 2025	4	0	0

Source: Auditors' Analysis on Developer Files from 2021/22 to 2024/25, 2025

Table 3.21 shows that only Bagamoyo Sugar Limited and TANESCO submitted one quarterly compliance and monitoring report covering key performance indicators. The rest of the developers did not submit their reports. This indicated that, despite signing the performance agreements,

[12] Number of Quarterly Performance Reports supposed to have been Submitted to EWURA up to August 2025

developers did not comply with the reporting requirements stipulated in those agreements.

The situation was mainly due to EWURA's inadequate follow-up and enforcement mechanisms to ensure that developers submit the required performance reports as stipulated in the agreements. This was informed by the developers, who, during the interviews, admitted they had received requests from EWURA to submit their reports in a timely manner. The Audit noted that, the absence of consequences or penalties, along with reliance on voluntary reporting by developers, further reduced compliance with the agreed-upon reporting obligations.

As a result, EWURA lacked timely performance data to monitor the operations of developers who had signed performance agreements. Furthermore, performance data for developers with a total installed capacity of 20,825 kW (20.82 MW), who did not sign agreements with EWURA, was also absent. These include Jumeme (1,206 kW), Powerhut (878 kW), Madope (700 kW), Kiliflora (230 kW), Powercorner (206 kW), Ruaha (128 kW), Watu Na Umeme (48 kW), E.On Off Grid Solution (29 kW), Ngombeni Power Limited (1,400 kW), Luponde Hydro Limited (900 kW), Madope Hydro Company Limited (1,700 kW), Nextgen Solawazi Limited (5,000 kW), Mkulazi Holding Company Limited (3400 kW), and BXC Tanzania Limited (5,000 kW).

Inadequate reporting creates a data gap, hindering EWURA’s ability to monitor the situation and assess compliance with licensing or registration conditions.

3.5.5 Inadequate Inspections of Licensed and Registered Developers

A review of the EWURA’s Action Plans, Implementation Report, and inspection reports for the Financial Years 2021/22 to 2024/25 revealed that EWURA did not adequately conduct inspections for licensed registered power plants. This is contrary to Section 31 of the Electricity Act, 2008, which mandates the Energy and Water Utilities Regulatory Authority (EWURA) to monitor and regulate all licensed energy suppliers, including conducting post-commissioning inspections to ensure compliance with technical standards, licensing conditions, safety requirements, and service

reliability benchmarks. **Table 3.22** shows the total number of licensed plants inspected.

Table 3.22: EWURA's Inspection Coverage of Licensed Power Plants

Financial Year	Total Licensed Plants	No. of Power Plants Inspected by EWURA	Power Plants Inspected (%)
2021/22	18	3	17
2022/23	19	2	11
2023/24	22	6	27
2024/25	22	5	23
Average (4-Year)	**Not applicable**	**4**	**19**

Source: Auditors' Analysis on Inspection Reports 2021/22 to 2024/25, 2025

Table 3.22 shows the inspections conducted at licensed Power Plants, with the inspection rate lowest in the 2022/23 Financial Year and highest in 2023/24.

Further review of EWURA's Action Plans, Implementation Reports, and inspection reports for registered power plants for the Financial Years 2021/22 to 2024/25 is presented in **Table 3.23.**

Table 3.23: EWURA's Inspection Coverage of Registered Power Plants

Financial Year	Total Registered IPPs	No. of Power Plants Inspected by EWURA	Power Plants Inspected (%)
2021/22	69	1	1
2022/23	69	0	0
2023/24	69	8	12
2024/25	105	0	0
Average (4-Year)	**Not applicable**	**2**	**3**

Source: Auditors' Analysis on Inspection Reports 2021/22 to 2024/25, 2025

Table 3.23 shows that, no inspections of the registered power plants were conducted in the Financial Years 2022/23 and 2024/25. The Table further shows that the inspection rate was highest in 2023/24 and lowest in 2021/22. In the Financial Year 2024/2025, no plant was inspected by EWURA. Further analysis of the comparison between the planned and conducted inspections is provided in **Table 3.24.**

Table 3.24: Planned versus Actual Inspections of Licensed and Registered Power Plants

Financial Year	Number of Licensed and Registered Power Plants	Planned Inspections	Inspections Conducted	Variation between the Planned and Conducted inspections	% of Planned Inspections Conducted	% of Inspection Coverage vs Total Plants
2021/22	87	34	4	30	11.76	4.60
2022/23	88	34	2	32	5.88	2.30
2023/24	91	34	14	20	41.20	15.40
2024/25	127	34	5	29	14.70	3.90
Average	Not Applicable	34	6	28	18.40	6.60

***Source*:** Auditors' Analysis on Inspection Reports 2021/22 to 2024/25, 2025

Table 3.24 shows a comparison between the planned and conducted inspections at developers' Power Plants, with the inspection coverage rate lowest in 2022/23 and highest in 2023/24.

EWURA planned to conduct 34 inspections annually, yet actual implementation consistently fell short of the target. Specifically, only four inspections were conducted in 2021/22, two in 2022/23, 14 in 2023/24, and five in 2024/25, representing an average of 18.4% of planned inspections and a plant coverage of 6.6%.

Furthermore, analysis of inspection coverage across plant categories revealed that, on average, only 19% of licensed plants and 3% of registered plants were inspected between the Financial Years 2021/22 and 2024/25. The records show the lowest inspection coverage in the Financial Year 2022/23, with only 2 of 34 inspections conducted for licensed power plants. Also, in 2024/25, no registered power plants were inspected.

Although the number of licensed and registered power plants increased from 87 in 2021/22 to 127 in 2024/25, the inspection coverage did not keep pace with the sector's expansion. For this reason, most operational power plants were not subject to regulatory verification and compliance assessments during the audit period.

The further Audit analysis of the data on inspections conducted on licensed and registered power plants revealed the following.

a) Inadequate Compliance with Performance Parameters for Licensed Plants

The inspected licensed plants during the period were assessed to determine plant availability, utilisation, safety compliance, and regulatory compliance, as indicated in **Table 3.25.**

Table 3.25: Performance Assessment of Licensed Power Plants Across Key Operational Indicators

Indicator	Mean (%)	Median (%)	Standard Deviation (SD)	Interpretation (with reference to inspected plants)
Plant Availability	96	95	4.1	Most plants maintained high operational readiness. Mwenga (97%) and Tulila (96%) showed consistent performance, while Madope (90%) had minor downtime due to turbine maintenance.
Plant Utilization	81	78	10.2	Variability is mainly observed in hydropower plants, depending on rainfall and grid demand. Mtera (CF 72%) and Tulila (CF 79%) remained stable, while Andoya (CF 63%) and Uwemba (CF 68%) showed lower generation due to hydrological constraints.
Safety Compliance	87	88	9.5	Compliance is generally satisfactory, with safety programmes in place at Tulila and Mwenga. However, TPC Plant (2024) recorded one fatal incident due to electrocution, reducing the overall average.
Regulatory Compliance	82	85	7.3	The majority adhered to licensing and reporting conditions (Darakuta Solar, Mwenga Hydro). Some small IPPs (TANWATT, Andoya) did not fully submit their quarterly technical reports and maintenance logs, indicating partial compliance.

Source: Auditors' Analysis on the Inspection Reports for Licensed Plants from the Financial Year 2021/22 to 2024/25, 2025

It was further noted that several licensed plants failed to comply with the submission of technical reports and performance parameters. For instance, *TANWATT* and *Andoya* failed to regularly submit operational and maintenance reports as required by EWURA licensing conditions.

This gap limited the EWURA's ability to monitor plant performance trends, efficiency levels, and adherence to environmental and safety standards.

b) Inadequate Compliance with Performance Parameters for the Registered Plants

The registered plants inspected during the period were assessed for plant availability, utilisation, safety compliance, and regulatory compliance, as indicated in **Table 3.26.**

Table 3.26: Performance Assessment of Registered Power Plants Across Key Operational Indicators

Indicator	Mean (%)	Median (%)	Standard Deviation	Interpretation (with reference to inspected plants)
Plant Availability	98	100	3.4	Registered plants, such as the Watu na Umeme Solar Plant (100%) and Bezi Island (98%), maintained near-perfect availability. Minor deviations were noted at Juma Island (92%) due to frequent fuel shortages for the gensets.
Plant Utilization	74	72	8.1	Bezi (CF ~65%) and Juma (CF 68%) recorded lower utilisation due to the genset being out of fuel and the solar batteries being low on charge. Watu na Umeme (CF 90%) performed better due to stable solar output and minimal downtime.
Safety Compliance	100	100	0	All registered plants (Watu na Umeme, Bezi, Juma) reported zero fatal and non-fatal incidents, showing strong adherence to safety and Occupational Health standards.
Regulatory Compliance	79	80	9.2	Watu na Umeme complied with meter replacement and billing system requirements but failed to submit business

Indicator	Mean (%)	Median (%)	Standard Deviation	Interpretation (with reference to inspected plants)
				plans and quarterly reports. PowerHut partially complied with customer inspection obligations, while Jumeme underperformed in energy service loss reporting and service response submissions.

Source: Auditors' analysis on the Inspection Reports for Registered Plants from the Financial Year 2021/22 to 2024/25, 2025

The analysis of inspection reports for registered power plants revealed inconsistent compliance with technical and regulatory reporting obligations. While plants such as *Watu na Umeme* and *Bezi Island* demonstrated strong performance in terms of plant availability (100% and 98%, respectively) and maintained excellent safety standards with zero incidents, deficiencies were noted in other areas.

Specifically, *Juma Island* and *PowerHut mini-grids* experienced low plant utilisation rates (below 70%) due to limited genset fuel supplies and delayed maintenance. Additionally, *Jumeme* and *PowerHut* failed to consistently submit quarterly performance and business operation reports, contrary to EWURA's regulatory requirements.

This irregularity weakened continuous oversight and hindered practical assessment of service reliability and consumer protection within mini-grid operations.

The following were the reasons for the inadequate conduct of inspections:

(i) Inadequate Inspection Plans

The audit noted that EWURA's inspection plans did not specify the number of power plants to be inspected within a given period. Instead, the plans were expressed in broad terms. For example, the EWURA Strategic Plan (2021/22–2025/26) sets an annual target of conducting at least 34 compliance monitoring inspections in the electricity subsector. However, it did not quantify how many registered or licensed plants should be inspected at a time, as a single inspection activity may cover more than one plant.

This lack of explicit quantification limits the ability to effectively plan, prioritise, and measure inspection coverage.

(ii) Lack of a Computerised Inspection Tool

The review of the 2021/22 Performance Report revealed that EWURA had planned to develop a computerised system to enhance the planning, coordination, and reporting of inspection activities. The system was designed to streamline data management, strengthen compliance follow-up, and facilitate timely decision-making through automated reporting. However, by June 2024/25, the initiative had not been implemented. As a result, inspection processes continued to rely on manual tracking and fragmented documentation, limiting their effectiveness.

(iii) Inadequate Submission of Performance Reports

During the interview, the audit noted that EWURA conducted regular inspections of projects to ensure compliance with technical standards, license conditions, and scheduled maintenance requirements. However, since June 2024, EWURA has been relying on Performance Agreements with developers, as shown in **Table 3.26**, on the basis of which project reports are prepared and submitted for review before deciding whether to conduct physical inspections. For those developers with whom EWURA has not signed agreements, regular inspections are performed. As a result, inspection gaps may lead to undetected non-compliance, reduced developer accountability, and uninformed regulatory decisions, thereby affecting the sustainability and reliability of renewable energy projects.

3.5.6 Non-Compliance with the Approved Tariff Orders

The audit noted deviations from the conditions set out in the tariff orders for various power producers approved by EWURA, namely: Mwenga Power Services Limited, Powergen Renewable Energy Limited, Jumeme Rural Power Supply, Powercorner Tanzania Limited, Watu Na Umeme Tanzania Limited, and Husk Power System Limited. Specifically, the Audit noted that these producers charged customers higher tariffs than required by the Law. These actions are contrary to Section 13 (2) of the Electricity and Natural Gas (Tariff Application and Rate Setting) Rules, 2021, which states that no licensee shall charge any customer a tariff exceeding that approved by the Authority.

The audit noted that EWURA enforces the approved tariff rates through compliance inspections of developers to ensure they adhere to the conditions set out in the Tariff Order. **Table 3.27** shows the status of each developer as of the latest EWURA inspection conducted in 2024.

Table 3.27: The Current Status of the Implementation of Tariff Orders by Developers

Name of Developer	Number of Conditions according to tariff order (A)	Number Complied Conditions (B)	Compliance Rate (%)
Mwenga Power Services Ltd (MPL)	8	7	87.5
PowerGen	4	0	0
Jumeme	4	0	0
Powercorner	4	0	0
Watu na Umeme Tanzania Ltd	5	3	60
Husk Power Systems Ltd	6	0	0
Average Compliance Rate			**24.58**

Source: Auditors' Analysis on Tariff Orders and Inspection Reports, 2025

Table 3.27 illustrates the level of compliance among six Independent Power Producers (IPPs) with the conditions outlined in their approved tariff orders. Mwenga Power Services Ltd (MPL) had the highest compliance rate at 87.5%, followed by Watu na Umeme Tanzania Ltd at 60%. The remaining four developers, PowerGen, Jumeme, Powercorner, and Husk Power Systems Ltd, did not comply with any of their tariff conditions. Overall, the average compliance rate was 24.58%, indicating low adherence to tariff order requirements.

Furthermore, the audit noted instances in which Independent Power Producers charged tariffs different from those approved by EWURA. In some instances, customers were billed at lower rates than the officially approved tariffs, while in others, the customers were billed at higher rates than the approved tariff which is contrary to Section 13(2) of the Electricity and Natural Gas (Tariff Application and Rate Setting) Rules, 2021 which states that no licensee shall charge any customer a tariff exceeding that approved by the Authority. **Tables 3.28, 3.29,** and **3.30** show customer categories and the deviations from the approved tariff amounts.

Table 3.28: Deviations from EWURA-Approved Tariffs Charged to Jumeme Residential Customers

Total Amount Paid (TZS)/kWh	Date Paid	Energy Received (kWh)	Energy Price (TZS)	VAT (18%)	EWURA (1%)	REA (3%)
2000	16/07/2023	1	1639.3	295.1	16.4	49.2
2000	01/04/2024	1	1639.3	295.1	16.4	49.2

Source: Auditors' Analysis on Compliance Monitoring Inspection Report for Jumeme 2024, 2025

According to **Table 3.28**, the residential user was charged lower (TZS 1639.3/kWh) than the 2023 Approved Rate (TZS 1690/kWh)**. Table 3.36** provides details on the deviations from the approved tariff for commercial users.

Table 3.29: Deviations from EWURA-Approved Tariffs Charged to Jumeme Commercial Customers

Total Amount Paid (TZS)/ kWh	Date Paid	Energy Received (kWh)	Energy Price (TZS)	VAT (18%)	EWURA (1%)	REA (3%)
6000	-	3.2	4918	885.2	49.2	147.5
3500	11/01/2024	1.7	2868.9	18	28.7	86.1

Source: Auditors' Analysis on Compliance Monitoring Inspection Report for Jumeme 2024, 2025

According to **Table 3.29**, licensees must charge at the approved 2024 rates: TZS 1,560/kWh (Day) and TZS 1,670/kWh (Night). However, it was noted that a commercial customer was charged a higher rate at TZS 1687.6/kWh. **Table 3.30** provides details on the deviations from the approved tariff for productive users.

Table 3.30: Deviations from the Approved Tariff for Jumeme Productive Users

Total Amount Paid (TZS)/kWh	Date Paid	Energy Received (kWh)	Energy Price (TZS)	VAT (18%)	EWURA (1%)	REA (3%)
10000	05/05/2024	6.3	8196.7	1475.4	82	245.9
10000	03/05/2024	6.3	8196.7	1475.4	82	245.9

Source: Auditors' Analysis on Compliance Monitoring Inspection Report for Jumeme 2024, 2025

Table 3.30 shows that licensees were charged lower at TZS 1300/kWh than the 2024 approved tariff rate of TZS 1310/kWh or the Night Approved Rate of TZS 1570/kWh.

The audit noted that all six (6) approved tariff orders expired in 2024, except for the Watu na Umeme tariff order, which ended in June 2025. None of the tariffs has been revised. This indicates gaps in enforcing compliance with approved tariff conditions, arising from EWURA's inadequate follow-up on tariff application monitoring and delays in communicating updated tariff approvals to stakeholders.

Additionally, EWURA had not yet established a fully automated system to track tariff compliance across all IPPs in real time, thereby limiting effective oversight of adherence to tariff conditions. As a result, customers were not adequately protected from unfair billing practices and operational inefficiencies, indicating the regulatory authority's inability to safeguard consumer interests.

3.6 The Ministry of Energy did not Effectively Measure the Performance of Renewable Energy Projects to ensure Timely Meeting of the Targeted Energy Mix

Despite the Ministry of Energy's stated commitment through the National Energy Policy (2015), the Strategic Plan (2021/22–2025/26), and the Power System Master Plans (PSMP 2020 and PSMP 2024) to expand renewable energy sources, the audit noted performance measurement gaps in relation to how results are defined, tracked, and operationalised across the sector.

The KPIs for renewable energy were not adequately linked across the core strategic documents. The Ministry did not regularly track and report project milestones against PSMP schedules. Moreover, it lacked a centralised, regularly updated database to consolidate project inputs, licenses, and field

status (planned, under preparation, under construction, or phased out). Additionally, the implementation strategy was inadequately established and inconsistently applied, as described below.

3.6.1 Inadequate Development and Linkage of KPIs for Renewable Energy Contribution in the Ministry of Energy's Strategic Plan (2021/22-2025/26)

Effective Key Performance Indicators (KPIs) are the foundation of accountability and execution discipline in the renewable energy sector. As guided by the OECD-DAC Evaluation Criteria and the National Evaluation Manual (2024), KPIs must be SMART: Specific, Measurable, Achievable, Relevant, and Time-bound, to translate strategy into measurable results and facilitate timely course correction.

The audit observed that the Ministry of Energy's Strategic Plan (2021/22-2025/26) outlines a clear ambition under Objective D: New and Renewable Energy Resources Developed, aimed at strengthening energy security, promoting environmental sustainability, and accelerating socio-economic transformation. The strategies include developing solar, wind, geothermal, biomass, and biofuel projects, partnering with the private sector, and formulating enabling policies such as the Renewable Energy Strategy, the Geothermal Legal Framework, and the Energy Efficiency Action Plan, all by 2026.

However, the corresponding KPIs for power from renewable sources, the rate of renewable energy use, the availability of renewable energy equipment, and the existence of a geothermal framework were not SMART. They were broad and lacked baselines, measurable targets, and timelines. Generally, the Audit noted the following challenges with regard to development and linkage of KPIs:

(a) Existence of Outdated Targets

The target to increase the percentage share of renewable energy in total energy generation by June 2021 was outdated and no longer aligned with the current planning period, which spans from 2021/22 to 2025/26. This indicates that the Ministry had not sufficiently updated its targets to reflect the ongoing strategic cycle. As a result, the renewable energy objectives continued to rely on outdated benchmarks that did not capture recent policy developments, new project pipelines, or technological

advancements. Consequently, performance measurement was weakened, as progress could not be accurately assessed against relevant, time-bound indicators aligned with the Ministry's current strategic priorities.

(b) Lack of attributes of SMART Indicators

The KPIs for the renewable energy development lack key characteristics of SMART indicators. For instance, "Percentage of power generated from renewable resources" does not provide a baseline value or annual milestones to assess progress over time. "Rate of use of renewable energy sources" is vague and undefined, making it difficult to measure consistently. In contrast, the "Availability of equipment for renewable energy" lacks specificity regarding the types of equipment, quantities, and technologies available.

3.6.2 Inadequate Tracking and Reporting of the Performance Indicators and Milestones

It was noted that the Ministry of Energy set renewable energy targets and milestones in the Power System Master Plan (PSMP) 2020 and its 2024 update, as indicated in the strategic plan 2021/22 to 2025/26, Para 4.5, to track progress against planned outcomes and objectives. However, no systematic monitoring or continuous tracking mechanism has been in place to ensure their implementation by TANESCO, TGDC, and other private developers.

The only formal reporting occurs through the five-yearly PSMP updates, which mainly reschedule rather than evaluate the project's progress against established milestones. This implementation gap is further described below.

a) Inadequate Tracking and Reporting of Performance Indicators and Milestones for Geothermal Projects

The Ministry of Energy, through the Power System Master Plan (PSMP), established milestones and performance indicators for geothermal projects to ensure effective tracking of targets. The PSMP 2020 identified geothermal development as a priority and outlined 10 projects with a cumulative planned capacity of producing 995 MW by 2044, as indicated in **Appendix 9.** It compared this information with reporting in the TGDC

performance reports for the Financial Years 2021/22 to 2025, as shown in **Table 3.31**.

Table 3.31: Tracking of Geothermal Projects from PSMP 2020 and TGDC Performance Reports (2021/22-2024/25)

Category of Alignment / Tracking	No. of Projects	Projects Alignment (%)	Description / Observation
Fully Matched (Appeared with the same year and capacity)	1	10	Projects appearing in both the PSMP 2020 and TGDC reports with similar timelines and/or capacities.
Partially Matched (Appeared but with a different year or capacity)	3	30	Projects listed in both PSMP and TGDC, but with discrepancies in capacity or commissioning year (e.g., Ngozi, Kiejo-Mbaka).
Not Matched / Missing (Planned in PSMP but absent in TGDC reports)	6	60	Projects such as Ngozi II, Songwe, Natron, and Luhoi, as well as later phases, are not reflected in TGDC reports.
New Projects (Appeared in TGDC reports but not in PSMP 2020)	3	—	Projects, including Ibadakuli-Shinyanga, Mtagata-Kagera, and Majimoto-Musoma, are not part of the PSMP 2020 plan.

Source: Auditors' Analysis on the Power Master System Plan 2020 and TGDC Performance Report 2021-2025, 2025

From **Table 3.31**, it was noted that geothermal project milestones were not adequately tracked or consistently reported. The audit identified discrepancies between the Power System Master Plan (PSMP 2020) and the Tanzania Geothermal Development Company (TGDC) performance report (2025). Out of 10 geothermal projects listed in PSMP 2020, only 4 projects (40%) appeared in TGDC's report.

For the reported projects, both timelines and planned capacities have deviated significantly. For example, Ngozi was scheduled for commissioning in 2023 with an installed capacity of 30 MW, yet TGDC reported a revised date of 2025, and no generation capacity was achieved as of the audit period. Likewise, Kiejo-Mbaka was projected to contribute 60 MW by 2024, but TGDC's records showed only 10 MW (17%) under preliminary exploration.

In addition, 6 projects (60%), including Ngozi II, Songwe, Lake Natron, Luhoi, Kisaki, and the Rufiji Basin phases, with a combined planned capacity of 795 MW, were completely absent from TGDC's performance reporting. This means that 795 MW out of the 995 MW of geothermal capacity planned under PSMP 2020, or 79%, were not documented in TGDC's implementation reports.

Conversely, TGDC reported projects such as Ibadakuli–Shinyanga, Mtagata–Kagera, and Majimoto–Musoma, which were not included in the PSMP 2020. The divergence between the Ministry's strategic plan and TGDC's operational reporting in its Strategic Plan of 2017-2042, annual plans for 2021/22-2024/25, and its annual performance reports for 2021/22-2024/25 makes it difficult to track progress against national targets.

The PSMP 2024 updated and revised the geothermal expansion plan to 1,110 MW by 2048. The update postponed the first commissioning from 2023 to 2028, shifting projects such as Ngozi, Songwe, and Kiejo–Mbaka into the medium term without providing a clear explanation for the delays or linking the revisions to TGDC's operational milestones.

The inadequate tracking mechanism for geothermal projects is attributed to the lack of alignment between the PSMP targets set by the Ministry and the implementation framework used by TGDC. As a result, the geothermal development roadmap lacks a clear framework for tracking outcomes, leading to frequent project postponements that fail to achieve the intended results.

b) Inadequate Tracking of Performance Indicators and Milestones for Hydropower Projects

A review of PSMP 2020 revealed that the plan identified 26 hydropower projects with a cumulative capacity of approximately 5,197 MW to be developed by 2044, as indicated in **Table 3.32**.

Table 3.32: Summary of Tracking and Alignment of Hydropower Projects in PSMP 2020, PSMP 2024, and TANESCO Business Plan (2021/22–2025/26)

Category of Tracking / Alignment	Number of Projects	Percentage	Observation
Fully Tracked (Active implementation)	3	12	JNHPP (phased commissioning 2024–2026), Hale (2025), and Malagarasi (2028) are under construction and consistently reported in PSMPs and TANESCO plans.
Partially Tracked (Listed but delayed or still under preparation)	2	8	Ruhudji (358 MW) and Rumakali (222 MW) appear in all plans but remain at the preparation stage, with commissioning delayed by 4–5 years.
Not Tracked (Absent in operational plans or shifted beyond the 2030s)	21	80	The majority of projects, such as Kikonge, Upper Kihansi, Kakono, Masigira, and the Mnyera Basin projects, were repeatedly postponed or omitted from TANESCO's plan.

Source: Auditors' Analysis on PSMP 2020, PSMP 2024 and TANESCO Business Plan 2021/22-2025/26, 2025

The audit noted inadequate tracking and reporting of hydropower project milestones. Although the PSMP 2020 and PSMP 2024 outlined 26 projects with a total planned capacity of 5,197 MW by 2044, these milestones were not systematically monitored or linked to TANESCO's Business Plan or Corporate Strategic Plan (CSP). Only 5 projects (19%) were tracked: JNHPP (2,115 MW), Hale (21 MW), Malagarasi (49.5 MW), Ruhudji (358 MW), and Rumakali (222 MW). Of these, only 3 (12%) were under construction, while Ruhudji and Rumakali were still in the preparation stage.

The remaining 21 projects (81%), including Kikonge, Upper Kihansi, Kakono, and the Mnyera Basin series, were either postponed to the 2030s or omitted from TANESCO's reports without justification. PSMP 2024 also showed further delays in major projects, such as Kikonge, Rumakali, and Upper Kihansi, of 4–8 years, reflecting a misalignment between the Ministry of Energy's targets and TANESCO's objectives. For example, Upper Kihansi was pushed from 2026 to 2030, while Ruhudji, Rumakali, and Kikonge were shifted from 2025–2028 to 2030.

This also led to the underutilization of preparatory infrastructure, such as works undertaken at the Upper Kihansi, which have remained idle for over two decades. Consequently, the lack of consistent tracking and alignment has contributed to delays in achieving national hydropower generation targets. Project-level monitoring indicates uncertainty over Tanzania's ability to achieve the planned 5,197 MW hydropower capacity by 2044.

c) Inadequate Tracking of Performance Indicators and Milestones for Solar Projects

A review of PSMP 2020, PSMP 2024, and TANESCO's Business Plan 2025/26 revealed inadequate tracking and alignment of solar projects with the planning documents, as indicated in **Table 3.33**.

Table 3.33: Tracking and Alignment of Solar Projects

Category of Tracking / Alignment	Number of Projects	Percentage (%)	Observation
Fully Tracked (Active implementation)	1	7	Only Kishapu (50 MW) is currently under construction and is consistently reflected in the PSMP 2024 and TANESCO's Business Plan 2025/26.
Partially Tracked (Listed but delayed or still under preparation)	4	29	Zuzu Dodoma (130 MW), Manyoni (100 MW), Same (50 MW), and Kisima (144 MW) are under preparation but not yet operational, with commissioning targets postponed beyond 2026.
Not Tracked (Absent in operational plans or dropped between PSMPs)	9	64	Projects such as Dodoma I & II, Kitapilimwa Iringa, Manyoni Phase II, Shinyanga II, and Iringa Solar (2044) were either omitted from TANESCO's plan or postponed without progress reporting.

***Source*:** Auditors' Analysis on PSMP 2020, PSMP 2024 and TANESCO Business Plan 2021/22-2025/26, 2025

The audit noted that the Power System Master Plans (PSMP 2020 and PSMP 2024) outlined clear targets, expanding solar capacity from 715 MW in 2020 to 1,574 MW in 2024. However, only 1 project (7%) was actively tracked and

implemented, while the remaining projects were either delayed or unaccounted for in operational reports.

Of the 14 projects listed under PSMP 2024, only Kishapu (50 MW) was under construction and consistently reflected in both PSMP 2024 and TANESCO's Business Plan 2025/26. Four projects (29%), Zuzu, Dodoma (130 MW), Manyoni (100 MW), Same (50 MW), and Kisima (144 MW), were listed as "under preparation." Still, none had reached the construction phase, despite their commissioning being targeted for 2026.

A total of 9 projects (64%), including Dodoma I & II, Kitapilimwa Iringa, Manyoni Phase II, Shinyanga II, and Iringa Solar (2044), were either omitted from TANESCO's operational plan or postponed without justification or progress updates.

The inadequate tracking and reporting of solar project milestones is attributed to misalignment between the PSMP projections and TANESCO's operational and strategic planning. As a result, solar project milestones are frequently revised or postponed, undermining the attainment of national energy planning goals.

d) Inadequate Tracking of Performance Indicators and Milestones for Wind Projects

The audit noted that, despite the PSMP 2020 and 2024 projections that 100 MW of wind capacity could be commissioned at *Singida* by 2025, no progress was recorded in TANESCO's Business Plan 2025/26 as indicated in **Table 3.34**.

Table 3.34: Tracking and Alignment of Wind Projects

Category of Tracking / Alignment	No. of Projects	Percentage (%)	Observation
Fully Tracked (Active implementation)	0	0	No wind projects under construction or in operation were reported during the audit period.
Partially Tracked (Listed but delayed or still under preparation)	1	20	The *Singida Wind Project (100 MW)* appears in both PSMP 2020 and 2024 but remains at the planning stage with no recorded progress.
Not Tracked (Absent in operational plans or dropped between PSMPs)	4	80	Other proposed wind projects listed in earlier energy strategies were not included in TANESCO's Business Plan 2025/26 or progress reports, indicating a lack of active follow-up.

***Source*:** Auditors' Analysis on PSMP 2020, PSMP 2024, and TANESCO Business Plan 2025/26, 2025

As shown in **Table 3.34** PSMP 2020, PSMP 2024, and TANESCO Business Plan 2025/26, only 1 project (20%), the Singida Wind Project, was mentioned across PSMP 2020 and PSMP 2024. Despite being mentioned, this project has remained at the planning stage with no initiation activities. The remaining 4 projects (80%) that had been conceptually proposed under PSMP 2020 and PSMP 2024 were not tracked or reported in the TANESCO Business Plan 2025/26, which is currently being implemented by TANESCO.

The inadequate tracking and reporting of wind projects are attributed to inadequate coordination between the Ministry's strategic targets and TANESCO's implementation framework, as well as an overreliance on IPPs without precise mechanisms to monitor their progress. As a result, project timelines have been inconsistently revised. It was noted that, projects originally planned in PSMP 2020 have been dropped or rescheduled. As a result, the credibility of the PSMP as a guiding document for wind development has been undermined.

3.6.3 Inadequate Measurement of the Outcomes for Renewable Energy Projects

The review of the performance reports noted inadequate monitoring of renewable energy projects in the Financial Years 2020/21 and 2022/23, as the Ministry established its Monitoring Section in 2023, which produced its first report for the Financial Year 2023/24. This was an inadequate alignment with Para 3.6 vi–viii of the Ministry of Energy (MoE) Functions and Organisation Structure, 2022, which requires the Ministry to monitor and evaluate programmes through reporting instruments based on KPIs.

A review of available reports showed that monitoring focused mainly on budget execution and physical progress; for example, JNHPP (98.01%), Shinyanga Solar (7%), and Malagarasi HPP (15.65%), rather than assessing the achievement of PSMP milestones or coordination among agencies. The Ministry did not comprehensively evaluate whether hydropower, solar, wind, and geothermal projects were aligned with the PSMP targets or whether delays were being addressed.

It was noted that inadequate monitoring resulted from the tendency to use a framework designed for budget tracking rather than for outcome-based evaluation. Consequently, there was limited evidence on whether renewable energy targets under PSMP 2020 and PSMP 2024 were being met, making it difficult for policymakers and partners to use the Ministry's monitoring outputs to inform decision-making.

3.6.4 Lack of a Centralised and Regularly Updated Database for Renewable Energy Projects

During the audit, it was noted that the Ministry of Energy did not maintain a centralised database covering all renewable energy projects, both planned and phased out. Instead, information was scattered across different sources. For example, the Power System Master Plan (PSMP) 2020 and its 2024 updated list of renewable energy projects, while EWURA maintains its own licensing database. This was contrary to Para 2.14 (iv) of the Ministry of Energy's Strategic Plan 2021/22–2025/26, which emphasises the need to improve the availability, reliability, quality, and affordability of energy supply. Achieving all these requires complete, reliable, and regularly updated data to support decision-making and oversight.

However, through interview with Ministry of Energy officials conducted during the factual clearance meeting it was noted that, the Ministry has developed the National Energy Information Management System (NEIMS) under the Energy Sector Reform Project, to consolidate data sources into a single, integrated, and continuously updating covering the full renewable energy project lifecycle, including planned, under preparation, under construction, operational, and phased-out projects phases.

The absence of a comprehensive and continuously updated database limits the Ministry's ability to coordinate projects, track progress, avoid duplication, and ensure alignment of renewable energy initiatives with national targets.

3.6.5 Inadequate Development of the Implementation Strategy for the Renewable Energy Projects through the Power System Master Plan of 2020

According to good practice in power system planning and results-based management principles, a Power System Master Plan should be implementation-ready, including a clear implementation strategy, defined project pipelines (government and IPP), assigned responsibilities, and aligned generation and transmission timelines to enable timely execution and accountability.

During the audit, it was noted that the PSMP 2020 lacked an implementation strategy. However, during its 2024 update, an implementation strategy was also developed to guide project implementation before the next PSMP update. Further analysis of the implementation strategy revealed that it leaves the definition of government and IPP project pipelines to TANESCO after approval, rather than locking them into the plan itself.

For instance, Chapter Seven of the PSMP 2024 noted that, within 60 days of its approval, TANESCO should identify government-developed projects, and within 90 days identify projects to be developed by Independent Power Producers (IPPs). Further steps require firming up investment costs within 90 days, establishing implementation modes such as public-private partnerships within 120 days, preparing a formal implementation strategy within 150 days, and commencing implementation within 180 days. This approach creates a window of uncertainty at the front end, allowing slippage even on the project timeline.

The lack of an implementation strategy for the PSMP 2020 stemmed from the Ministry's reliance on the executing institutions' implementation plans. The inadequate PSMP implementation strategy increases the risk of deviations from the commissioning schedules because projects may not be identified, costed, or assigned implementation modes within the 60–180-day timelines, leaving less time for actual construction and threatening PSMP online-date targets.

3.7 Inadequate Coordination of Renewable Energy Stakeholders to Ensure Effective Planning, Implementation, and Monitoring

Despite the Ministry of Energy's emphasis, under the National Energy Policy (2015), and its Strategic Plan (2021/22–2025/26), on effective coordination with regulatory bodies (e.g., EWURA), implementing agencies (e.g., TANESCO, REA, TGDC), private developers, and development partners in renewable energy, the audit noted ineffective efforts among the responsible parties.

The audit noted efforts such as the issuance of Power System Master Plans (PSMPs) and the formation of ad-hoc task forces to resolve disputes (e.g., mini-grid encroachment cases). However, the Ministry has not established structured mechanisms to ensure continuous collaboration and effective monitoring of stakeholder performance, as further described below.

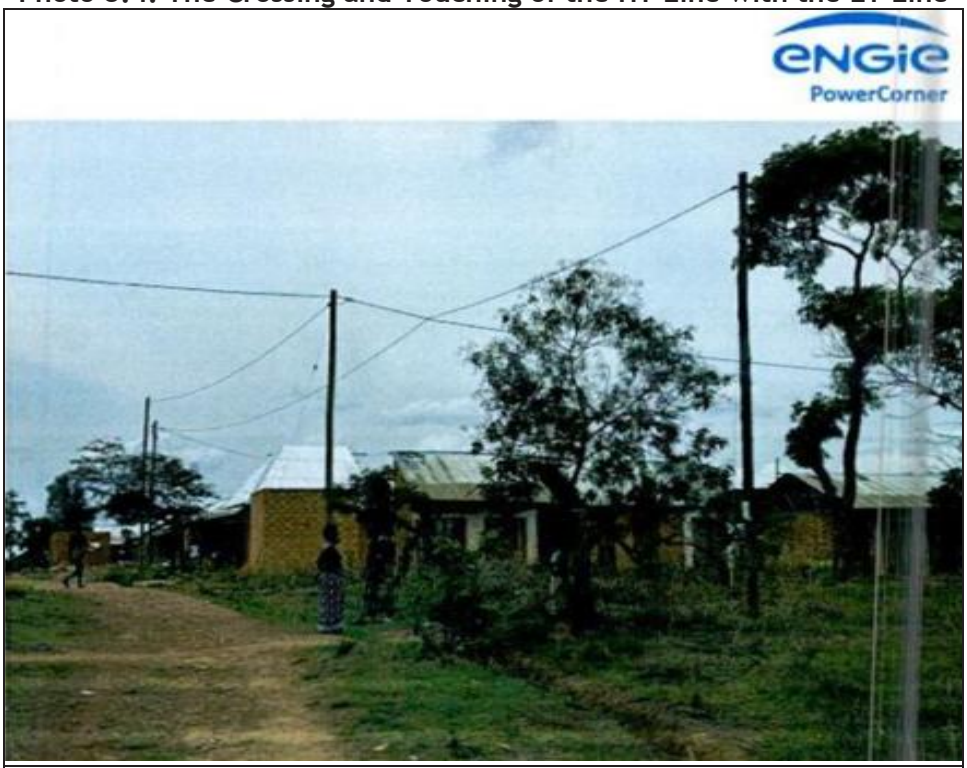
3.7.1 Inadequate Coordination of Stakeholders during the Grid Extension Programme

During the audit, a review of the *Mini-Grids Encroachment Report (2025)* revealed ineffective coordination among key sector institutions, including TANESCO, REA, EWURA, private developers, and the Ministry of Energy, in implementing the grid extension programme to increase rural electrification. Specifically, REA, in collaboration with TANESCO, extended main-grid electrification projects into areas already served by private mini-grid developers without prior notification or consultation. This is contrary to Objective D of the Strategic Plan 2021/22–2025/26 of the Ministry of Energy, which mandates enhancing collaboration with stakeholders in the development of renewable energy resources and coordinating plans with Institutions, Agencies, and Regulators under the Ministry of Energy.

Between 2023 and 2025, the Task Force established by the Ministry of Energy verified 45 mini-grids, of which 34 were found to have been encroached upon by main-grid extensions, despite being registered and recognised in the EWURA's database.

Furthermore, a review of correspondence from Power Gen to EWURA further demonstrated this issue. Power Gen reported to the Ministry of Energy and EWURA through a letter Ref. PTC202411/KS_KG/1 dated 17 November 2024, highlighting an ongoing rural electrification project at Kagera Nkanda, Kasulu District in Kigoma Region. The letter indicated that a high-tension (HT) line was constructed to cross their low-tension (LT) line without prior communication or coordination, as shown in **Photo 3.4**.

Photo 3.4: The Crossing and Touching of the HT Line with the LT Line



***Source*:** Extracted from the letter with Ref.PTC202411/KS_KG/1 dated 17 November 2024 from PowerCorner to the Ministry of Energy and EWURA

The inadequate coordination of renewable energy activities among stakeholders was attributed to unstructured communication channels for information sharing and joint decision-making on common issues. As a

result, 34 registered mini-grids were encroached upon, despite being registered and recognised in EWURA's database.

3.7.2 Inadequate Institutionalised Joint Planning and Review Mechanisms for Renewable Energy Projects

The audit noted inadequate coordination among energy stakeholders despite the Ministry of Energy's mandate under Para 3.1 of the Functions and Organisation Structure, 2022. Communication was primarily conducted through letters, with no structured joint planning or regular review mechanisms in place. Each institution, TANESCO, TGDC, REA, and EWURA, implemented activities independently, and engagement was limited to ad hoc actions, such as site visits or temporary task forces.

This situation was caused by the absence of an institutionalised coordination framework, an unclear division of roles in renewable energy governance, and a lack of joint performance-monitoring mechanisms. Due to uncoordinated implementation, stakeholder inputs were not systematically integrated into planning, resulting in fragmented goals, duplication of efforts (as evidenced by 34 overlapping mini-grids), and the repeated rollover of geothermal development targets.

3.7.3 Inadequate Facilitation of Timely Information Exchange Between Renewable Energy Stakeholders

The audit noted that the Ministry had not established a unified platform or inter-agency reporting framework to consolidate renewable energy data. Each agency maintained separate databases and reporting timelines not aligned with the PSMP targets. The Ministry primarily relied on the five-year PSMP updates rather than continuous project-level reporting. This was contrary to the National Energy Policy (2015), which requires the Ministry of Energy to ensure effective coordination and timely information exchange among stakeholders, including TANESCO, TGDC, EWURA, REA, IPPs, and development partners.

Correspondence through a letter Ref: D.68/291/01 of 14 July 2025, showed that information flow was reactive, based on ad hoc data requests rather than structured reporting. The absence of institutionalised mechanisms for routine information sharing limited the Ministry's ability to track progress,

align plans, and coordinate resources, resulting in repeated project delays and inconsistencies across the renewable energy sector.

CHAPTER FOUR

AUDIT CONCLUSION

4.1 Introduction

This chapter draws the audit conclusions based on the findings described in Chapter Three. The basis for drawing the audit conclusions is the overall and specific objectives of the audit, as presented in Chapter One of this Performance Audit Report.

4.2 General Audit Conclusion

The audit concludes that the Ministry of Energy, EWURA, TANESCO, REA, and private developers have made efforts to promote renewable energy through the PSMP and rural electrification programmes. However, these efforts have not adequately translated into measurable progress toward energy diversification and require further improvement. Oversight across the pre-development, development, and operational stages remains inadequate, resulting in low and inconsistent plant utilisation, delays in project integration into the grid, and slow diversification of the energy mix. The Ministry inadequately maintains a coordinated performance-monitoring system and a unified data system, thereby limiting accountability and informed decision-making.

4.3 Specific Audit Conclusions

4.3.1 The Ministry of Energy (MoE) and EWURA did not Adequately Oversee Pre-development Activities for Renewable Energy Projects

The audit concludes that the pre-development stage of renewable energy projects was not well managed. The Ministry of Energy and EWURA did not effectively manage the pre-development phase of renewable energy projects, resulting in delays in the preparation, licensing, and financing readiness.

EWURA has not enforced compliance with statutory time limits for processing project applications and lacks a system to record, monitor, and report progress as required under the Electricity (Development of Small Power Projects) Rules, 2020. This time management deficiency reduces

transparency, delays project approvals, and undermines the achievement of generation targets set in the Power System Master Plan (PSMP).

The Ministry of Energy has not secured or formalised the 46 strategic project sites, which have a combined potential of 5,706 MW, thereby increasing the risks of land encroachment and delayed implementation. EWURA does not adequately review business plans, feasibility studies, and financial capacity before licensing projects, thus reducing assurance on project sustainability.

Furthermore, the Ministry neither facilitates access to carbon-credit financing nor guides participation in the carbon market, resulting in missed opportunities for climate funding. Generally, gaps in institutional coordination and monitoring hinder progress toward Tanzania's renewable energy diversification and sustainability goals.

4.3.2 The MoE and EWURA did not Ensure that the Development Activities of Renewable Energy Projects were Adequately Executed

The Audit concludes that the Ministry of Energy (MoE) and the Energy and Water Utilities Regulatory Authority (EWURA) have not adequately ensured that renewable energy projects are effectively managed from procurement to commissioning. As a result, these projects have not been delivered on time, met quality standards, or been successfully integrated into the national grid. Renewable energy projects are not consistently developed on schedule, leading to prolonged implementation and delayed connections to the national grid.

For the projects that have signed SPPA between government (through TANESCO) and IPPs; Out of 21 projects approved by EWURA and expected to generate electricity between FY 2021/22 and 2025/26, eight projects (38%) had already missed COD timelines, while five other projects (24%) faced a high risk of delay due to financing bottlenecks, the omission of the LD clause in the SPPA terms, and slow project implementation.

Moreover, delays in completing transmission infrastructure and inadequate planning and execution of government-led projects have resulted in underutilisation of hydropower capacity and persistent grid stability challenges, thereby weakening the efficiency and reliability of the power sector.

Furthermore, procurement processes relied solely on unsolicited methods for engaging Independent Power Producers (IPPs), resulting in inefficiencies during project implementation and delaying timely grid integration. EWURA also inadequately monitored and evaluated project development, as developers did not submit progress reports or implementation plans. In addition, the provisional licenses for renewable projects under construction were not considered mandatory. Similarly, EWURA's commissioning supervision had gaps in witnessing; justifications for decisions to witness or not witness testing and commissioning were not formally recorded. This limited verification of technical compliance before plants were integrated into the grid.

As a result, Tanzania continues to face delays in project completion, the presence of idle generation assets, and slow integration of renewable capacity, which undermine progress toward the targets set in the Power System Master Plans (PSMPs) of 2020 and 2024 and limit advancement toward a reliable and sustainable energy mix.

4.3.3 EWURA did not Adequately Manage the Operational Activities of Renewable Energy Projects to achieve the Required Capacity

The audit concludes that EWURA did not adequately ensure that the operational activities of renewable energy projects are conducted effectively to achieve the required generation capacity and sustainability targets. Despite progress in licensing renewable energy developers and integrating some projects into the grid, persistent operational and regulatory shortcomings undermine sector performance.

By June 2025, EWURA had licensed 22 renewable energy projects, 20 of them (91%) were feeding power into the national grid. Over the same period, the average plant utilisation factor declined from 43.9% in 2021 to 35.2% in 2023, before modestly recovering to 37.8% in 2024. These trends suggest that, while most licensed projects are operational, several are not yet operating at their expected capacity. In addition, several operational facilities, such as Murongo/Kikagati, Yovi, Matembwe, Darakuta, Luponde, Andoya, and Tulila, did not have generation data, despite being listed in daily grid generation reports, revealing significant reporting and monitoring shortfalls.

EWURA has also not effectively ensured timely registration and oversight of licensing, thereby inadequately guaranteeing compliance with production standards. The Authority does not consistently receive or review performance reports from licensees, hindering early detection of underperformance or outages.

Moreover, inspections are irregular, lacking systematic planning, and fail to provide assurance that plants adhere to technical standards and maintenance schedules. Furthermore, enforcement of approved tariffs by Independent Power Producers (IPPs) remains insufficient, as some developers continue to apply unapproved rates, undermining consumer protection.

Generally, these shortcomings demonstrate that EWURA's operational oversight has not been sufficient to ensure that renewable energy projects are reliable and deliver the expected generation output. Inadequate enforcement of compliance mechanisms, limited performance monitoring, and the absence of timely operational data compromise regulatory effectiveness and hinder Tanzania's ability to attain its targeted renewable energy capacity as outlined in the Power System Master Plan (PSMP 2024).

4.3.4 The Ministry of Energy did not Effectively Measure the Performance of Renewable Energy Projects

The Ministry of Energy did not effectively measure or monitor renewable energy performance to ensure the timely achievement of the national energy mix targets. Despite having the *National Energy Policy (2015)*, *Strategic Plan (2021/22-2025/26)*, and *Power System Master Plans (2020 and 2024)*, performance indicators remain broad and not SMART, lacking baselines, measurable targets, and timelines. Consequently, the Ministry cannot track progress toward its PSMP 2024 goal of achieving a 50% of renewable energy share by 2040.

The Ministry does not maintain an integrated framework to track project milestones or consolidate data on renewable energy. Of 55 renewable energy projects planned across hydro, solar, wind, and geothermal technologies, with a cumulative capacity of over 10,000 MW, only 9 (16%) are actively tracked. For example, three of 26 hydropower projects (12%), JNHPP (2,115 MW), Malagarasi (49.5 MW), and Hale (21 MW) are under construction, while geothermal projects like Ngozi and Kiejo-Mbaka have

reached less than 20% of their planned capacity. Solar and wind projects exhibit similar underperformance, with only one of 14 solar projects (7%) and none of the 11 wind projects currently under active implementation.

The Ministry lacks a centralised, regularly updated database to consolidate information on renewable energy projects from institutions such as TANESCO, TGDC, REA, and EWURA. This fragmentation has led to the presence of inconsistencies between strategic and operational plans. For instance, 34% of projects listed in PSMP 2024 do not appear in TANESCO's Business Plan 2025/26. Moreover, implementation milestones under PSMP 2024 are not operationalised; progress reports for FY 2023/24 and 2024/25 focus on construction percentages without linking them to the planned PSMP outcomes.

Generally, an inadequate performance measurement framework, outdated targets, fragmented data systems, and limited coordination have reduced the Ministry of Energy's ability to demonstrate tangible progress in renewable energy generation. These gaps threaten the achievement of the national energy mix targets set in the Power System Master Plan (2024), which envisage hydro, gas, solar, wind, and geothermal contributions of 61, 17, 14, 6, and two per cent, respectively, by 2044.

4.3.5 The Ministry of Energy did not Coordinate Effectively with Other Stakeholders

The Ministry of Energy and its sector institutions did not effectively coordinate renewable energy development activities, thereby weakening overall planning, implementation, and monitoring of projects. Collaboration among the Ministry, EWURA, TANESCO, and REA remains fragmented, with each institution operating independently and relying on ad hoc communication rather than structured engagement. This lack of coordination has led to overlapping activities across project areas, inconsistent implementation schedules, and inefficient use of public and private resources.

Furthermore, the Ministry has not established a central coordination or information-sharing platform to harmonise renewable energy data and reporting timelines across its various agencies. As a result, sector performance cannot be accurately tracked, and progress toward the Power

System Master Plan (PSMP) targets remains unclear. The absence of a unified monitoring mechanism and joint planning framework undermines accountability, delays project delivery, and discourages private-sector participation. Overall, the inadequate coordination structure limits Tanzania's ability to achieve its renewable energy targets and slows progress toward a diversified, sustainable, and secure national energy mix.

CHAPTER FIVE

AUDIT RECOMMENDATIONS

5.1 Introduction

This chapter contains recommendations for the Ministry of Energy and the Energy and Water Utilities Regulatory Authority (EWURA) regarding the management of renewable energy projects in the country. The National Audit Office believes that, based on the principles of the 3Es of Economy, Efficiency, and Effectiveness, these recommendations should be fully implemented to improve the management of renewable energy projects in the country.

5.2 Recommendations to the Ministry of Energy and EWURA

5.2.1 Implementation of Pre-Development Activities

The Energy and Water Utilities Regulatory Authority is urged to:

(a) Establish and enforce a tracking system for statutory timelines, including completeness checks, evaluation deadlines, and notification periods, and report compliance regularly to management; and

(b) Strengthen the licensing process by reviewing business plans, feasibility studies, and financial capacity reports before issuing licenses, and develop clear templates and criteria to guide the review.

The Ministry of Energy is urged to:

(a) Secure and demarcate all identified and published strategic generation sites to ensure the protection of designated sites for future power development.

5.2.2 Implementation of Development Activities

The Energy and Water Utilities Regulatory Authority is urged to:

(a) Conduct periodic inspections of power plants and associated transmission infrastructure under development to ensure that construction aligns with acceptable quality standards and agreed commercial operation dates.

5.2.3 Implementation of Operational Activities

The Energy and Water Utilities Regulatory Authority is urged to:

(a) Strengthen monitoring by conducting scheduled periodic inspections for all developers to ensure compliance with licence and registration requirements, as well as performance agreements; and

(b) Enforce environmental standards for battery life-cycle management to ensure developers are fully accountable for the management of all used batteries, in accordance with the approved Environmental and Social Management Plan.

5.2.4 Coordination and Performance Measurement

The Ministry of Energy is urged to:

(a) Develop and institutionalise SMART renewable energy KPIs aligned with the Power System Master Plan (PSMP), and ensure systematic tracking and reporting of the PSMP milestones through quarterly progress reports to enhance accountability and performance measurement; and

(b) Establish a centralised national database to capture all initiated grid, mini-grid, and off-grid projects, enabling effective monitoring of project progress and strengthening coordination among sector stakeholders.

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APPENDICES

Appendix 1: Responses from the Audited Entities

This section covers responses from the Audited Entities, the Ministry of Energy and EWURA. The responses are divided into two parts, namely General and Specific comments, as detailed below.

Responses from the Ministry of Energy

General Comment:

The Ministry of Energy appreciates the Performance Audit of the Management of Renewable Energy Projects and acknowledges the relevance of the observations and recommendations made by the National Audit Office (NAO). The Ministry is committed to implementing the recommendations in collaboration with relevant sector institutions to strengthen planning, coordination, monitoring, and sustainability of renewable energy development in Tanzania.

Specific Comments

S/N	Recommendation	Comments from MoE	Planned Action (s)	Implementation timelines (s)
1	Secure and demarcate all identified and published strategic generation sites to ensure the protection of designated areas for future power development.	Due to fiscal constraints, the Government will continue to finance land acquisition and compensation for TANESCO-led and Public-Private Partnership (PPP) projects, subject to budget availability. For privately developed projects, investor-led land acquisition at financial closure will	• Conduct a review of all earmarked sites for TANESCO-led and PPP projects. • To follow up on compensation funds from the Ministry of Finance • In collaboration with the Ministry responsible for Lands and LGAs,	By the end of December 2027

S/N	Recommendation	Comments from MoE	Planned Action (s)	Implementation timelines (s)
		continue to be applied in accordance with approved regulatory and contractual frameworks, as a complementary measure to Government efforts to accelerate project implementation and achieve national power generation targets.	the Ministry will initiate formal demarcation and gazettement of earmarked sites.	
2	Develop and institutionalise SMART renewable energy KPIs aligned with the Power System Master Plan (PSMP), and ensure systematic tracking and reporting of PSMP milestones through quarterly progress reports to enhance accountability and performance measurement.	The Ministry concurs with this recommendation, as it will strengthen results-based planning, monitoring, and evaluation of renewable energy projects. Aligning KPIs with the PSMP will improve transparency, coordination, and evidence-based decision-making.	• Develop a framework for SMART renewable energy KPIs aligned with PSMP targets. • Institutionalise the KPIs within the Ministry's planning, monitoring, and reporting systems. • Establish a quarterly PSMP progress reporting mechanism.	Framework development by June 2027 and Operationalization by December 2027

S/N	Recommendation	Comments from MoE	Planned Action (s)	Implementation timelines (s)
			• Build the capacity of relevant units on KPI tracking and reporting.	
3	Establish a centralised national database to capture all initiated grid, mini-grid, and off-grid projects, enabling effective monitoring of project progress and strengthening coordination among sector stakeholders.	The Ministry agrees with this recommendation and recognises the importance of a centralised data system for improved sector coordination, planning, and investment tracking. The initiative will be implemented in collaboration with EWURA, TANESCO, REA, and other stakeholders.	• Design and develop a centralised national energy projects database • Integrate data from existing systems of sector institutions. • Develop data-sharing protocols and reporting standards. • Train focal persons from key institutions on data submission and validation.	System design by June 2026 and Full rollout by December 2026

Responses from the EWURA

General Comment:

EWURA commends the Performance Audit of the Management of Renewable Energy Projects for making sensible observations and recommendations. It is expected that implementing the recommendations will enhance EWURA's performance.

Specific Comments

S/N	Recommendation	Comments from EWURA	Planned Action (s)	Implementation timelines (s)
1	Establish and enforce a tracking system for statutory timelines, including completeness checks, evaluation deadlines, and notification periods, and report compliance regularly to management.	EWURA, in collaboration with eGA, is currently digitising its business processes. This will include the approval processes for PPAs and the Initiation of procurement for power projects. This will facilitate the enforcement of a tracking system for statutory timelines, including completeness checks, evaluation deadlines, and notification periods, and will regularly report compliance to management.	Digitisation of EWURA Business Processes	The assignment has already commenced, and the Completion date is at the end of June 2026
2	Strengthen the licensing process by reviewing business plans, feasibility studies, and financial capacity reports before issuing licenses, and develop clear templates and	EWURA will improve the review process by including criteria for adequacy and a checklist for review of completeness of the submission against prescribed requirements.	Review of the evaluation process for enhancement	Completion by the end of June 2026

S/N	Recommendation	Comments from EWURA	Planned Action (s)	Implementation timelines (s)
	criteria to guide the review.			
3	Conduct periodic inspections of power plants and associated transmission infrastructure under development to ensure that construction aligns with acceptable quality standards and agreed commercial operation dates.	The recommendation is technically sensible and acceptable. However, there is no legal mandate to exercise the recommended actions. The law mandates EWURA to conduct pre-licensing inspections after construction is complete, before issuing a license or registration for facilities with a capacity below 1MW. EWURA will engage the Ministry of Energy to consider amending the Electricity Act to grant EWURA a mandate to conduct inspections of electricity generation facilities and transmission and distribution infrastructure during construction.	To recommend to the Ministry of Energy on the Amendment of the Electricity Act, CAP. 131.	By the End of January 2026
4	Strengthen monitoring by conducting scheduled periodic inspections for all developers to ensure compliance with licence and registration requirements, as well as performance agreements.	Currently, the monitoring modality requires licensees to submit data as per the agreed Key Performance Indicators under signed Performance Agreements. Upon receipt of the data, inspections are conducted to verify any ambiguous data before performing a performance assessment of the respective licensee.	Receive and conduct inspections to verify the submitted data from licensees, and carry out performance assessments.	Quarterly

S/N	Recommendation	Comments from EWURA	Planned Action (s)	Implementation timelines (s)
5	Enforce environmental standards for battery life-cycle management to ensure developers are fully accountable for all used batteries, in accordance with the approved Environmental and Social Management Plan.	The Environmental Management Act, CAP 191, under Part III (Administration and Institutional Arrangements), gives mandates to the following concerning the handling of hazardous waste materials: the Minister Responsible for Environment, the Director of Environment, the Council (NEMC), the Environmental Inspector, and the Local Government Authority. TBS is the responsible organisation with regard to enforcing standards for all imported products, including batteries. EWURA will incorporate into the Inspection Manual the requirement to check the licensee's plans for handling damaged and dead batteries during compliance monitoring inspections, as per the Environmental Management (Hazardous Waste and Management) Regulations 2021.	Review of the Inspection manual to incorporate the guidelines for handling of damaged and dead batteries.	Completion at the end of June 2026

Appendix 2: Main and Sub-audit Questions

This section provides the list of five main audit questions and their respective sub-questions.

Audit Question 1	**To what extent does renewable energy contribute to the attainment of the targeted energy mix?**
Sub-Question 1.1	Has the Ministry of Energy attained the measurable targets for renewable energy in the national energy mix?
Sub-Question 1.2	Are renewable energy projects contributing sufficient capacity and generation in line with national or sectoral targets for each specific renewable source (e.g. solar, hydro, wind)?
Sub-Question 1.3	Are the installed capacities and actual outputs from renewable energy projects aligned with the projections in the national energy master plan?
Audit Question 2	**Do the MoE and EWURA adequately oversee renewable energy projects to ensure compliance with regulatory requirements during the pre-development phase?**
Sub-Question 2.1	Are Pre-Development Activities conducted on schedule and in compliance with the regulatory requirements to ensure the timely implementation of renewable energy projects?
Sub-Question 2.2	Does the Ministry of Energy identify and protect the strategic sites for renewable energy development projects to minimise future project costs and land conflicts?
Sub-Question 2.3	Do the developers prepare realistic financial forecasts aligned with project timelines and technical requirements?
Sub-Question 2.4	Does EWURA adequately review the project's viability assessment for alignment with the Power Systems Master Plan, including key technical, environmental, and financial analyses?
Sub-Question 2.5	Does the MoE facilitate access to carbon credit financing mechanisms for renewable energy projects to enhance their financial viability?
Audit Question 3	**Do the MoE and EWURA ensure that the development activities (from procurement to commissioning) for renewable energy projects are adequately conducted in accordance with the approved technical standards and specifications?**
Sub-Question 3.1	Are renewable energy projects developed on schedule and to the required quality standards, as per the agreements, to ensure timely grid integration?
Sub-Question 3.2	Are the procurement processes, whether through solicited or unsolicited approaches, engaging Independent Power Producers (IPPs), timely and in accordance with the required standards?
Sub-Question 3.3	Does EWURA monitor renewable energy project development in line with standard power purchase

	agreements to meet the specified commercial operation date?
Sub-Question 3.4	Does EWURA effectively supervise commissioning tests to ensure timely compliance with the technical standards of renewable energy projects?
Audit Question 4	**Does EWURA ensure that the operational activities of renewable energy projects are conducted effectively to maintain their declared capacity and availability targets?**
Sub Question 4.1	Does EWURA adequately register and license renewable energy developers to ensure compliance with the required standards of energy production?
Sub-Question 4.2	Are the licensed and registered renewable energy projects effectively generating and feeding power into the national grid, mini-grid, and off-grid systems?
Sub-Question 4.3	Does EWURA receive and review renewable energy developer performance reports in a timely manner to assess their operational performance?
Sub-Question 4.4	Does EWURA inspect projects for compliance with technical standards and licence conditions and ensure scheduled maintenance for sustainability?
Sub Question 4.5	Does EWURA require IPPs to impose the approved tariffs to ensure customer protection?
Audit Question 5	**Does the Ministry of Energy effectively measure the performance of renewable energy projects to ensure alignment with the targeted national energy mix?**
Sub-Question 5.1	To what extent has the Ministry of Energy developed and implemented comprehensive Key Performance Indicators to effectively monitor the contribution of renewable energy sources to the national energy mix?
Sub-Question 5.2	Are performance indicators and milestones for renewable energy projects regularly tracked, reported and used for decision-making?
Sub-Question 5.3	Does the MoE collect, analyse, and store reliable data to measure the performance of renewable energy projects?
Sub-Question 5.4	To what extent has the Ministry of Energy established an implementation strategy for the Energy Master Plan to facilitate the management of renewable energy projects?
Question 6	**Does the Ministry of Energy coordinate effectively with regulatory bodies (e.g., EWURA), implementing agencies (e.g., REA, TANESCO, TGDC), and private developers in renewable energy projects?**
Sub-Question 6.1	Has the Ministry of Energy established a functioning formal coordination mechanism (e.g., MoUs, working groups, joint task forces) with EWURA, REA, TANESCO, and private developers?
Sub-Question 6.2	Does the Ministry of Energy engage in joint planning or review meetings with these stakeholders?

Sub-Question 6.3	Does the Ministry facilitate the timely exchange of information between these stakeholders?
Sub Question 6.4	Does the Ministry monitor and evaluate the outcomes of its coordination efforts across renewable energy projects?

Appendix 3(a): Selection of Renewable Energy Projects which are Licensed

This section presents the selection of licensed renewable energy projects.

Project Area	Operator	Resource	Installed Capacity 2024 (MW)	Selected	Date of Issued Licence
Hydro projects					
Njombe-Ludewa	Madope Hydro Company Limited	Hydro	1.84		30/06/2020
Njombe	Matembwe	Hydro	0.59		12/07/2024
Pwani	JNHPP (TANESCO)	Hydro	2,115		01/07/2024
Morogoro	Kidatu (TANESCO) (reached retirement time)	Hydro	204		01/07/1975
Iringa	Kihansi (TANESCO)	Hydro	180	Selected	01/07/2000
iringa	Mtera (TANESCO)	Hydro	80		01/07/1988
Tanga	N/P falls (TANESCO)	Hydro	68		01/07/1995
Tanga	Hale (TANESCO)	Hydro	21		01/07/2017
Moshi	Nyumba ya Mungu (TANESCO)	Hydro	8		01/07/1968
Iringa	Uwemba (TANESCO)	Hydro	0.84		01/07/1991
Iringa	Mwenga HPP	Hydro	4		01/03/2013
Ruvuma	Tulila HPP	Hydro	5		03/08/2016
Iringa	Ikondo	Hydro	0.4		12/07/2024
Njombe	Luponde	Hydro	1.06		30/06/2020
Ruvuma	Andoya HPP	Hydro	1		22/08/2016
Arusha	Darakuta HPP	Hydro	0.3		17/04/2024
Morogoro	Yovi HPP	Hydro	1		16/04/2019
Kigali-Rwanda	Rusumo HPP	Hydro	27		01/07/2023
Biomass Projects					
Morogoro	Mkulazi Holding Company Limited	Biomass	15		30/05/2025

Project Area	Operator	Resource	Installed Capacity 2024 (MW)	Selected	Date of Issued Licence
	(Energy for own use)				
Kilimanjaro	TPC	Biomass	9	Selected	18/06/2012
Njombe	Tanwat	Biomass	2.5		18/06/2012
Pwani	Bagamoyo	Biomass	1.5		09/09/2022
Solar Projects					
Shinyanga-Ushetu	BXC Tanzania Limited	Solar	5		27/06/2025
Kigoma	Solawazi	Solar	5	Selected	31/05/2021
Wind Project					
Iringa	Mwenga Hydro Ltd	Wind	2.4	Selected	29/12/2020

Appendix 3(b): Selection of Renewable Energy Projects which are Registered

This section presents the selection of registered renewable energy projects.

Project Area	Operator	Resource		Capacity (kW)	Selected Project	Selected Project
	Hydro Projects					
Manyara-Babati	Darakuta Hydropower Development Co. Limited	Hydro		0.45		3/07/2013
Arusha	Kiliflora Limited	Hydro		230.00		9/04/2018
Morogoro - Kilosa	Yovi Hydropower Co. Limited	Hydro		995.00	**Selected**	
Manyara - Babati	Darakuta Hydro Power Development Company Limited	Hydro		0.42		17/04/2024
Ikondo - Njombe	Matembwe Village Co. Ltd	Hydro		0.43		12/07/2024
	Solar Projects					
Mwanza-Ukerewe	Jumeme Rural Power Supply Ltd	Solar		90.00		14/05/2020
Arusha-Longido	PowerCorner Tanzania Limited	Solar		15.60		19/10/2016
Tanga-Korogwe	Watu na Umeme Limited	Solar		48.00		23/04/2018
Singida-Manyoni	PowerHut Renewables Limited	Solar		16.00		20/08/2018
Singida-Ikungi	PowerHut Renewables Limited	Solar		3.00		20/08/2018
Lindi-Liwale	PowerCorner Tanzania Limited	Solar		30.00		31/10/2018
Lindi-Nanyumbu	PowerCorner Tanzania Limited	Solar		30.00		31/10/2018
Lindi-Liwale	PowerCorner Tanzania Limited	Solar		30.00		31/10/2018

Project Area	Operator	Resource		Capacity (kW)	Selected Project	Selected Project
Kagera-Ngara-Bugalama	PowerHut Renewables Limited	Solar		3.18		11/01/2019
Kagera-Ngara-Murusagamba	PowerHut Renewables Limited	Solar		17.16		11/01/2019
Kagera-Biharamulo-Kalenge	PowerHut Renewables Limited	Solar		16.18		11/01/2019
Kagera-Biharamulo-Nyantakara	PowerHut Renewables Limited	Solar		17.18		11/01/2019
Mwanza-Buchosa-Itabagumba	PowerHut Renewables Limited	Solar		30.32		11/01/2019
Mwanza-Buchosa-Busenge	PowerHut Renewables Limited	Solar		28.68		11/01/2019
Mwanza-Buchosa-Kanyala	PowerHut Renewables Limited	Solar		30.32		11/01/2019
Singida-Ikungi	PowerHut Renewables Limited	Solar		23.96		11/01/2019
Lindi-Nachingwea-Matekwe	PowerCorner T Limited	Solar		16.00		11/12/2019
Lindi-Nachingwea-Lukumbule	PowerCorner T Limited	Solar		12.00		11/12/2019
Kigoma-Uvinza Kalya	PowerCorner T Limited	Solar		40.50		18/12/2019
Kigoma-Uvinza-kalya	PowerCorner T Limited	Solar		28.00		18/12/2019
Lindi-Nanyumbu	PowerCorner T Limited	Solar		16.00		27/12/2019
Kagera-Muleba-Kibumba	Jumeme Rural Power Supply Ltd	Solar		10.00		14/05/2020

Project Area	Operator	Resource		Capacity (kW)	Selected Project	Selected Project
Kagera-Muleba-Kasenyi	Jumeme Rural Power Supply Ltd	Solar		20.00		14/05/2020
Mwanza-Ukerewe	Jumeme Rural Power Supply Ltd	Solar		100.00	**Selected**	14/05/2020
Kagera-Muleba-Kebere	Jumeme Rural Power Supply Ltd	Solar		35.00		14/05/2020
Kagera-Muleba-Goziba	Jumeme Rural Power Supply Ltd	Solar		45.00		14/05/2020
Mara-Musoma	Jumeme Rural Power Supply Ltd	Solar		10.00		14/05/2020
Mwanza-Buchosa-Kanoni	Jumeme Rural Power Supply Ltd	Solar		100.00		14/05/2020
Kagera-Muleba-Bunyozi	Jumeme Rural Power Supply Ltd	Solar		45.00		14/05/2020
Kagera-Muleba-Mahaiga	Jumeme Rural Power Supply Ltd	Solar		20.00		14/05/2020
Mwanza-Ukerewe-Bukiko	Jumeme Rural Power Supply Ltd	Solar		100.00		14/05/2020
Mwanza-Ukerewe-Chifule	Jumeme Rural Power Supply Ltd	Solar		100.00		14/05/2020
Mwanza-Ukerewe-Lyegoba Island	PowerHut Renewables Limited	Solar		30.32		07/12/2020
Mwanza-Ilemela-Bezi Island	PowerHut Renewables Limited	Solar		42.60		07/12/2020
Mwanza-Sengerema-Juma Island,	PowerHut Renewables Limited	Solar		42.60		07/12/2020
Mwanza-Buchosa District-Chembaya Island	PowerHut Renewables Limited	Solar		29.80		07/12/2020

Project Area	Operator	Resource		Capacity (kW)	Selected Project	Selected Project
Mara- Bunda District- Sozia Island	PowerHut Renewables Limited	Solar		29.80		07/12/2020
Kigoma- Uvinza- Sibwesa	Jumeme Rural Power Supply Ltd	Solar		92.00		07/12/2020
Kigoma- Uvinza- Sigunga	Jumeme Rural Power Supply Ltd	Solar		56.00		07/12/2020
Kagara- Muleba- Rwiza Island,	Jumeme Rural Power Supply Ltd	Solar		20.00		07/12/2020

Appendix 4: List of Reviewed Documents and Reasons for Reviewing Them

This section presents the lists of documents reviewed and the reasons for their review during the audit.

Category	Title of the documents reviewed	Reason
Plans and Strategies for the Ministry of Energy and EWURA	• Ministry of energy Strategic plan • EWURA Five-Year Strategic Plan 2021/22 -2025/26; • Annual Plan for the Renewable Energy Division under the Ministry of Energy for Years 2021/22 – 2024/25; • Action Plan for the EWURA; • National Energy Efficiency Strategy 2024-2034	To assess: • The extent of MoE and EWURA's strategic plans for the management of renewable energy projects. • Whether the management of renewable energy is well planned and Budgeted.
Annual progress reports	• Annual Implementation reports of the division of the renewable energy under the Ministry of Energy (2021/22 – 2024/25); • Annual Implementation reports of the Directorate of Electricity under EWURA (2021/22 – 2024/25); and • Electricity Sub-Sector Regulatory Performance Report for the Financial Year (2021/22 – 2024/25)	To assess whether: • The Ministry of Energy coordinates and ensures the implementation of performance measures for renewable energy. • EWURA managed to regulate renewable energy projects based on their plans.
Supervision reports	• The EWURA inspection reports (2021/22 – 2024/25); • The minutes for meetings with developers; • Licence status register; and • Database of the Registered developers on the renewable energy projects.	• To assess whether EWURA regulates the developers of the renewable energy projects. • To determine whether there are robust databases on the management of renewable energy projects. • To assess how the plan of the inspection is conducted.
Monitoring and Evaluation Reports	• Monitoring and Evaluation reports (MoE) • Monitoring and Evaluation reports (EWURA)	• To assess whether MOE and EWURA are effectively monitoring and evaluating the management of renewable energy.

***Source*:** Institutions' Documents Related to the Management of Renewable Energy, 2025

Appendix 5: Officials Interviewed

This section provides details on the Officials from various entities interviewed during the audit.

Entity	Department/Division/Section	Officer Interviewed	Reason for Interview
Ministry of Energy	Renewable Energy Section	• Commissioner of Electricity and Renewable Energy Division • Principal Officer(s) of Renewable Energy Section; and • Other Officials, as advised by the Management of the Ministry of Energy	To assess: Effectiveness of coordination and performance measures in the implementation of Renewable Energy projects.
EWURA	Electricity Directorate	• Director of Electricity • Managers/or Principal Officer(s) of the Directorate of Electricity	To assess the effectiveness of management and monitoring of renewable energy projects, including pre-development activities, development activities, and monitoring of operational activities.
TANESCO	Renewable Energy Integration Unit	• Head of Renewable Energy Projects • Project Manager at Kidatu Power Plant	To verify and assess the implementation of renewable energy projects.
Independent Power Producer (IPP)	Generation and Distribution	• Developer (Mwenga, Jumeme, Solawazi, Yovi and Mkulazi)	To verify and assess the implementation of renewable energy projects.

Source: Auditors' Analysis from EWURA and Ministry of Energy's Detailed Organisation Structure, 2025

Appendix 6: Presents the Projects under Operation that Experienced Delays

This section provides details of projects that were in operation but experienced delays during development, with the actual COD occurring within the financial audit period of 2021/22 – 2024/25.

Name of Power Producer	Capacity (MW)	Source	SPPA Sign	Validity of the SPPA	Date of Required COD	Date of Actual COD	Delay (Months)(Actual date of COD - Required Date of COD)
Madope HPP	1.7	Hydro	22/12/2020	18	22/06/2022	16/07/2023	13
Nishati Lutheran (DKK) Investment Ltd (Ijangala hydro)	0.36	Hydro	22/12/2020	18	22/06/2022	12/09/2023	15
BXC Bukombe Project	5	Solar	21/3/2024	24	21/3/2026	19/8/2025	within
BXC Ushetu Project	5	Solar	21/03/2024	18	21/09/2025	23/05/2025	within
Bagamoyo Sugar Limited	1.5	Biomass	07/05/2023	36	07/05/2026	01/06/2023	within

***Source*:** Auditors' Analysis on the SPPA's

Appendix 7: Presents the Project's Status under Development, Including the Projects that Experienced Delays and Those at Risk of Delay

S/No.	Name of Power Producer	Capacity (MW)	Source	EWURA Approval Date	Status (April 2025)	TANESCO Status (July 2025)	SPPA Signing Date	Delay (Months)
1.	Pinyinyi HPP - Ngorongoro	1.9	Hydro	30/07/2021	Mobilisation and material procurement are ongoing	Under construction	01/10/2021	22
2.	Luponde Hydro Ltd	2	Hydro	16/08/2022	Under construction	Commissioning by Sept 2025	22/12/2022	13
3.	Bugando Natural Energy Ltd	5	Solar PV	29/12/2022	Equipment shipping, testing early 2026	Under construction	01/11/2022	15
4.	SSI Energy Tanzania Ltd (Kahama)	10	Solar PV	16/08/2022	Mobilisation stage; financial closure pending	No update	22/12/2020	55
5.	Infinite Power Resources Ltd (Gua)	5	Solar PV	30/03/2023	Construction not started	Fund solicitation ongoing	22/11/2023	8
6.	Infinite Power Resources Ltd (Isangawana)	8	Solar PV	30/03/2023	Construction not started	Fund solicitation ongoing	22/11/2023	5
7.	ZBS Investments Ltd (Nyasoro)	8	Solar PV	04/08/2023	SPPA signed; financing in progress	Awaiting new SPPA	13/11/2023	3

S/No.	Name of Power Producer	Capacity (MW)	Source	EWURA Approval Date	Status (April 2025)	TANESCO Status (July 2025)	SPPA Signing Date	Delay (Months)
8.	ZBS Investments Ltd (Mdunku)	6	Solar PV	04/08/2023	SPPA signed; financing in progress	Awaiting new SPPA	13/11/2023	3
9.	Maximum Power Tanzania Ltd (Paramawe)	5	Solar PV	29/02/2024	Fundraising ongoing	Fund solicitation stage	21/03/2024	Risk of delay
10.	BXC Tanzania Ltd (Kayenze-Ushetu)	5	Solar PV	29/02/2024	Completed but not connected to the grid	Awaiting interconnection	21/03/2024	Risk of delay
11.	Bwelui Company Ltd (Luswisi)	4.7	Hydro	16/08/2022	Pre-development studies ongoing	Fund solicitation stage	15/11/2022	Risk of delay
12.	Tangulf Nakatuta Energy Co. Ltd	10	Hydro	16/08/2022	Construction ongoing	No information	15/11/2022	Risk of delay
13.	CESNE Energy (T) Ltd	5.8	Solar	29/02/2024	Design and financing stages	No information	21/03/2024	Risk of delay
14.	Suma HPP	4	Hydro	24/04/2023	Under construction; turbine procurement ongoing	Commissioning by Sept 2025	27/01/2023	–
15.	Mofajus Investment Ltd	3	Hydro	24/04/2023	Pre-investment studies ongoing	No information	26/01/2023	–

S/No.	Name of Power Producer	Capacity (MW)	Source	EWURA Approval Date	Status (April 2025)	TANESCO Status (July 2025)	SPPA Signing Date	Delay (Months)
16.	Franciscan Sisters of Charity (Ifumbo HPP)	1	Hydro	24/04/2023	Securing funds for grid interconnection	Operating in island mode	21/03/2023	–
17.	Turiani Hydropower Co. Ltd	5	Hydro	28/01/2023	Design complete; financing in progress	New SPPA under signing	05/08/2025	–
18.	Lung'ali Natural Resources Co. Ltd	1.28	Hydro	24/11/2022	90% construction progress	New SPPA under signing	05/08/2025	–
19.	Ruaha Energy Co. Ltd (Ilundo HPP)	0.56	Hydro	23/03/2023	Technical updates ongoing	No information	19/12/2023	–
20.	Africa Power Investment Ltd (Kikuletwa II)	8	Hydro	29/02/2024	Fundraising through TIB/REA is ongoing	Fund solicitation stage	28/05/2024	–
21.	LUCSEC Co. Ltd (Lunyamacho HPP)	3	Hydro	29/02/2024	Fundraising ongoing	No information	21/03/2024	–
22.	FGS Eco-energy Ltd (Kamwana)	5	Hydro	29/02/2024	Seeking financing from CRDB/TIB	No information	09/04/2024	–
23.	Armstone Hydro Ltd (Luegere)	5.34	Hydro	28/02/2025	Fundraising ongoing	Fund solicitation stage	30/04/2025	–
24.	Armstone Hydro Ltd (Muyovozi)	2.27	Hydro	28/02/2025	Fundraising ongoing	Fund solicitation stage	06/05/2025	–
25.	African Benedictine Sisters of St.	0.317	Hydro	28/02/2025	Construction complete;	Commissioning by Dec 2025	30/04/2025	–

S/No.	Name of Power Producer	Capacity (MW)	Source	EWURA Approval Date	Status (April 2025)	TANESCO Status (July 2025)	SPPA Signing Date	Delay (Months)
	Agnes (Lupali HPP)				interconnection in progress			
26.	Ruaha Energy (Lumuma Solar PV)	2	Solar PV	23/03/2023	Construction not started	SPPA expired	19/12/2023	–
27.	Convivium Investments Tanzania Ltd	5 (to 10)	Solar PV	04/08/2023	Land acquired; financing expected by Sept 2025	Under mobilization	31/10/2023	–
28.	BXC Tanzania Ltd (Busongo, Bukombe)	5	Solar PV	29/02/2024	Installation in progress; completion June 2025	Commissioning by Aug 2025	21/03/2024	–
29.	FGS Eco-energy Ltd (Lunguya, Msalala)	10	Solar PV	27/06/2024	Negotiating financing with CRDB/TIB	No update	23/07/2024	–
30.	FGS Eco-energy Ltd (Newala)	5	Solar PV	27/06/2024	Financing negotiations ongoing	No information	23/07/2024	–
31.	Maximum Power Tanzania Ltd (Nkasi/Uruwira)	7	Solar PV	27/06/2024	Financing delayed; TIB term sheet obtained	Fund solicitation stage	23/07/2024	–
32.	Oreon Renewables (Kazaroho, Kaliua)	5	Solar PV	27/06/2024	Fundraising ongoing	No information	23/07/2024	–

S/No.	Name of Power Producer	Capacity (MW)	Source	EWURA Approval Date	Status (April 2025)	TANESCO Status (July 2025)	SPPA Signing Date	Delay (Months)
33.	Oreon Renewables (Utambalila, Mbozi)	5	Solar PV	27/06/2024	Fundraising ongoing	No information	23/07/2024	–
34.	BXC Tanzania Ltd (Geita)	10	Solar PV	25/07/2024	Land compensated; design in progress	Commissioning by Jan 2026	17/09/2024	–
35.	BXC Tanzania Ltd (Simanjiro)	7	Solar PV	25/07/2024	Land compensated; design in progress	Commissioning by Jan 2026	17/09/2024	–
36.	ZJL Company	5	Solar PV	29/08/2024	Fundraising ongoing	Fund solicitation stage	12/02/2025	–
37.	Kilombero Sugar Company	10	Biomass	25/04/2025	Construction complete; license pending	Awaiting operation approval	09/09/2025	–
38.	Mkulazi Holdings Co. Ltd	7	Biomass	04/08/2023	Construction, testing completed; awaiting TANESCO connection	Commissioning by Sept 2025	06/12/2023	–

Source: Auditors' Analysis on the SPPA's

Appendix 8: Plant Utilisation during the Generation Period

This section presents the plant utilisation during the generation period.

Plant	Mean Utilization	Std Dev	Coefficient of Variation (CV)(%)	Remarks
JNHPP	4.6	9.2	200	Critically Unstable / New Plant
Rusumo	10.0	19.9	199	Critically Unstable / New Plant
Bagamoyo Sugar	0.1	0.1	100	Critically Unstable
Andoya HPP	11.8	8.2	69.5	Highly Unstable
Ikondo	5.4	4.8	88.9	Highly Unstable
Tanwat	5.5	5.3	96.4	Highly Unstable
N/P Falls	44.3	18.5	41.8	Unstable
Luponde	49.1	18.2	37.1	Unstable
Nyumba ya Mungu (NYM)	58.3	29.2	50.1	Unstable (and high impact)
Hale	13.4	4.7	35.1	Unstable
Mtera	71.8	18.8	26.2	Moderately Unstable (and high impact)
YOVI	53.4	11.9	22.3	Moderately Unstable
Darakuta	67.8	12.3	18.1	Relatively Stable
NextGen Solawazi	9.8	3.7	37.8	Unstable (but on a positive trend)
Uwemba	29.7	5.7	19.2	Relatively Stable
Kihansi	44.5	9.0	20.2	Relatively Stable
Tulila -SPP (Hydro)	61.8	8.7	14.1	Stable
Kidatu	63.6	7.6	11.9	Stable
Mwenga -SPP	59.7	7.3	12.2	Stable
TPC Power plant	15.2	2.0	13.2	Stable

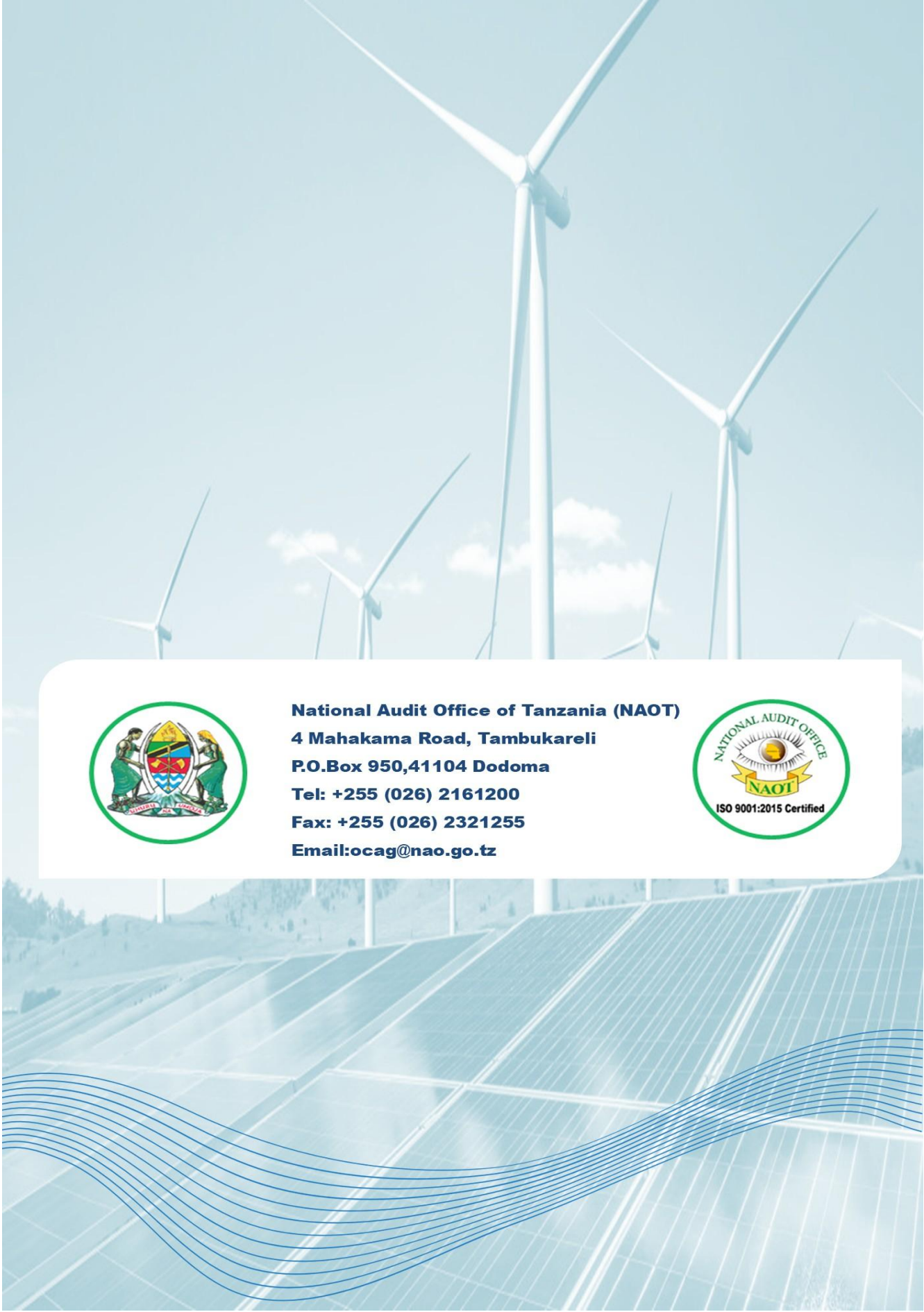
Appendix 9: Geothermal Projects Implementation

This section presents the implementation of the geothermal projects.

S/No.	Plant	Planned Year to start Generation	Capacity (MW)	Project Name Corresponding with PSMP and Performance Reports	Remarks
1.	Songwe	Not indicated	Not indicated	Corresponds	Mentioned in the performance report with no details.
2.	Ngozi (wellhead) & Ngozi I	2025	30	Does not correspond	Mentioned in the report, the commissioned year differs from that of PSMP 2020.
3.	Kiejo – Mbaka	2024	10	Corresponds	Mentioned in the report the same year of commission as PSMP 2020, but the capacity differs; PSMP shows 60 MW.
4.	Ngozi II	Not indicated	Not indicated	Does not correspond	Not indicated in the performance report.
5.	Natron	Not indicated	Not indicated	Corresponds	Mentioned in the performance report with no details.
6.	Luhoi	Not indicated	5	Corresponds	Mentioned in the report.
7.	Geothermal Phase I (Mbeya, Manyara, Morogoro, Arusha, Shinyanga)	Not indicated	Not indicated	Not indicated in the Performance report	Not indicated in the performance report.
8.	Geothermal Phase II (Mbeya,	Not indicated	Not indicated	Not indicated in the	Not indicated in the performance report.

S/No.	Plant	Planned Year to start Generation	Capacity (MW)	Project Name Corresponding with PSMP and Performance Reports	Remarks
	Manyara, Morogoro, Arusha, Shinyanga			Performance report	
9.	Geothermal Phase III (Mbeya, Songwe, Manyara, Morogoro, Arusha, Shinyanga)	Not indicated	Not indicated	Not indicated in the Performance report	Not indicated in the performance report.
10.	Geothermal Phase IV (Mbeya, Manyara, Morogoro, Arusha, Shinyanga)	Not indicated	Not indicated	Not indicated in the Performance report	Not indicated in the performance report.
11.	Ibadakuli-Shinyanga	Not indicated	Not indicated	Not indicated in PSMP 2020	Mentioned in the performance report with no details.
12.	Mtagata-Kagera	Not indicated	Not indicated	Not indicated in PSMP 2020	Mentioned in the performance report with no details.
13.	Majimoto-Musoma	Not indicated	Not indicated	Not indicated in PSMP 2020	Mentioned in the performance report with no details.

Source: Annual TGDC Performance Reports 2021/22 to 2024/25 and PSMP 2020



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