



# SUSTAINABLE ENERGY DEVELOPMENT PROGRAMME

## Annual Budget Monitoring Report

Financial Year 2022/23

October 2023

Budget Monitoring and Accountability Unit  
Ministry of Finance, Planning and Economic Development  
P.O. Box 8147, Kampala  
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## ABBREVIATIONS AND ACRONYMS

<b>AFD</b>	Agence Française de Développement
<b>AfDB</b>	African Development Bank Group
<b>CDAP</b>	Community Development Action Plan
<b>CGV</b>	Chief Government Valuer
<b>EIA</b>	Environmental Impact Assessment
<b>EPC</b>	Engineering, Procurement and Construction
<b>ERT</b>	Energy for Rural Transformation
<b>EXIM</b>	Export-Import Bank
<b>FAT</b>	Factory Acceptance Test
<b>GERP</b>	Grid Extension and Reinforcement Project
<b>GoU</b>	Government of Uganda
<b>HPP</b>	Hydro Power Project
<b>HSE</b>	Health Safety and Environment
<b>HV</b>	High Voltage
<b>IDA</b>	International Development Association
<b>IFMS</b>	Integrated Financial Management System
<b>IPC</b>	Interim Payment Certificate
<b>JICA</b>	Japan International Cooperation Agency
<b>KfW</b>	Kreditanstalt für Wiederaufbau
<b>KIL</b>	Kilembe Investment Limited
<b>KIS</b>	Kalangala Infrastructure Services Limited
<b>KRECS</b>	Kyegegwa Rural Electricity Cooperative Society Limited
<b>kV</b>	Kilo Volts
<b>LPG</b>	Liquefied Petroleum Gas
<b>LV</b>	Low Voltage
<b>MDAs</b>	Ministries, Departments and Agencies
<b>MEMD</b>	Ministry of Energy and Mineral Development
<b>MEPS</b>	Minimum Energy Performance Standard
<b>MLHUD</b>	Ministry of Lands, Housing and Urban Development
<b>MoU</b>	Memoranda of Understanding
<b>MPS</b>	Ministerial Policy Statement
<b>MV</b>	Medium Voltage
<b>MW</b>	Mega Watts
<b>NDP III</b>	Third National Development Plan
<b>OE</b>	Owner's Engineer
<b>PACMECS</b>	Pader- Abim Community Multi-Purpose Electric Co-operative Society
<b>PAPs</b>	Project Affected Persons



<b>PBS</b>	Programme Budgeting System
<b>PDHs</b>	Physically Displaced Households
<b>PIP</b>	Public Investment Plan
<b>PPDA</b>	Public Procurement and Disposal of Assets Authority
<b>PPP</b>	Public-Private Partnership
<b>RAP</b>	Resettlement Action Plan
<b>REP</b>	Rural Electrification Programme
<b>RoW</b>	Right of Way
<b>SDR</b>	Special Drawing Rights
<b>SPV</b>	Special Purpose Vehicle
<b>TA</b>	Technical Assistance
<b>TX</b>	Transformer
<b>UEDCL</b>	Uganda Electricity Distribution Company Limited
<b>UEGCL</b>	Uganda Electricity Generation Company Limited
<b>UETCL</b>	Uganda Electricity Transmission Company Limited
<b>UNBS</b>	Uganda National Bureau of Standards
<b>UREAP</b>	Uganda Rural Electrification Access Project



## FOREWORD

With a strategic focus on the theme for Financial Year 2022/23, “Full Monetization of the Ugandan Economy through Commercial Agriculture, Industrialization, Expanding and Broadening Services, Digital Transformation and Market Access,” the Government of Uganda has focused on the allocation of resources to strategic interventions which reflect a strong drive and dedication towards sustainable economic growth for the people of Uganda.

The findings from this year’s annual monitoring exercise reveal commendable strides in the programme operations, however, the challenges we face in the pursuit of economic transformation are evident. Limited resources demand service delivery efficiency, thus the urgent need for strategic reforms if we are to reap the development dividends of our investments.

A recent project review in some programmes revealed ineffective usage of loans and counterpart funding. This raises concerns about potential funding losses and increased costs. I urge all the implementing agencies to ensure that adjustments in planning, financial monitoring and analysis, coupled with prudent management are undertaken immediately. Let us seize this moment to build a more prosperous and sustainable Uganda for generations to come.

Ramathan Ggoobi

**Permanent Secretary/Secretary to the Treasury**





## EXECUTIVE SUMMARY

The goal of the Sustainable Energy Development (SED) Programme is to meet the energy needs of the country by providing adequate, affordable, clean, and reliable energy for sustainable socio-economic growth and development. The sub-programmes under this programme are: Transmission and Distribution; Generation, Renewable Energy Development; Energy Efficiency, and Conservation.

The specific objectives of the programme are:

- Increase access and utilization of electricity
- Increase the generation capacity of electricity
- Increase adoption and use of clean energy, and
- Promote utilization of energy-efficient practices and technologies

The programme is implemented by the Ministry of Energy and Mineral Development (MEMD), the Uganda Electricity Transmission Company Limited (UETCL), Uganda Electricity Generation Company Limited, Uganda Electricity Distribution Company Limited (UEDCL) and the Electricity Regulatory Authority (ERA). Other key private implementation partners are UMEME, KIL<sup>1</sup>, KRECS<sup>2</sup>, PACMECS<sup>3</sup>, and KIS<sup>4</sup>.

### Financial Performance

The approved budget for the programme was Ug shs1,685.66 billion (bn). The budget release under the programme was Ug shs 1,719.91bn and the expenditure was Ug shs 1,709.93bn. The release and expenditure exceeded the budget due to higher-than-expected disbursements on the Karuma Hydro Power Project (HPP) and the Third phase of the Energy for Rural Transformation (ERT III) project.

### Overall Programme Performance

The annual performance of the programme was poor at 49.7% and implementation of several planned interventions was behind schedule. In addition, several key milestones were missed, notably among these was the completion of Karuma HPP and several transmission/distribution lines. However, during the FY, the Mutundwe (Kampala)-Entebbe Transmission project was energized, and most of the electrification lots under the African Development Bank (AfDB) funding.

The performance of the Generation Sub-programme was fair at 52.2%. The main planned outputs under the sub-programme were the completion of works at Karuma HPP, the construction of Nyagak III, and the completion of defects liability for Isimba HPP. Although there were still some pending works at Karuma HPP, the overall progress of the works was at 99.9% and the project completion date was extended to 21<sup>st</sup> February 2024. Three of the six generation units (1, 3, and 4) at Karuma HPP had been commissioned adding 300MW to the generation capacity. However, only 80 MW was being evacuated from the HPP due to limitations posed by the transmission infrastructure that was vandalized.

1 Kilembe Investment Limited

2 Kyeggegwa Rural Electricity Co-operative Society

3 Pader-Abim Community Multipurpose Electric Society

4 Kilembe Investments Limited



Works at Nyagak III progressed during the financial year with civil works at the power house and penstock at 93%. Funding constraints limited the performance. The defects liability period of Isimba HPP ended on 31<sup>st</sup> March 2023 but major concerns especially the excessive wear of the concrete at the spillway gates and improper operation of the lower spillway gates were yet to be addressed by the contractor.

The Transmission and Distribution Sub-programme performance was fair at 54.1% by the end of FY2022/23 due to Right of Way (RoW) bottlenecks, contractor capacity challenges, and contract management delays. Several key milestones were reached with the addition of some ongoing transmission lines with their associated substations. Notable among these were the 75km of the transmission line connecting Karuma HPP to the Lira substation and the completion of works on the 35km Mutundwe-Entebbe Transmission Project. However, the works on other key transmission projects were under implementation with delays notably: The Lira-Gulu-Nebbi-Arua Transmission Project (85%), Gulu-Agago Transmission Project (85%) and the Mirama-Kabale Transmission Project (35%). The implementation of other projects namely: The Masaka-Mbarara and the Kampala Metropolitan transmission projects was still mired by the slow procurement process.

Implementation delays of the transmission projects were mainly attributed to difficulties in the acquisition of the line corridors, recurring incidents of vandalism, and the low technical and financial capacity of the contractors. The delayed completion of the projects has caused the persistence of deemed energy costs and was delaying the final commissioning of the Karuma HPP.

The implementation of several rural electrification projects continued during the financial year and several schemes under the Uganda Electricity Access Project (UREAP) were completed in the Eastern region (Kaliro, Iganga, Soroti, Serere), Northern region (Gulu, Nwoya, Lira, Alebtong), Southern (Butambala, Isingiro, Mbarara, Rukungiri) and Central region (Nakaseke, Luwero, Nakasongola, Kiryandongo Wakiso) were completed. Works on Lot 6 which is intended to connect Bugala Island to the national grid via a marine cable were pending under UREAP due to delays in delivery of the cable. Works under Energy for Rural Transformation (ERT III) were delayed by the failure to fully acquire wayleaves in time but lines in Masaka, Mukono, Gomba and Butambala, Kamwenge, Ntoroko, Ibanda were completed during the FY 2022/23.

Under the bridging of the demand-supply balance gap through accelerated Rural Electrification Project, a total of 2,791km out of 3,449.1km of Medium Voltage, 5,772 out of 7,131.61km of Low Voltage, and installation of 1,483 out of 1,926 distribution transformers have been completed and technically commissioned across different regions in the country. The procurement of connection materials such as the meters under the project was partially completed with 10% of the materials delivered. In total, 6,129km of medium voltage distribution (11kV and 33kV) and 10,690km of low voltage distribution lines were completed. The grid access increased from 19% at the end of FY2021/22 to 22% at the end of FY2022/23 and only 16,034 new connections were made countrywide against an annual target of 300,000.

The performance of the Renewable Energy Development Sub-programme was fair at 50% and the sub-programme is severely underfunded. The sub-programme has one intervention which is to promote the use of new and renewable energy sources. Construction of 15 mini-grids in the South Service Territory (Isingiro and Rakai) was ongoing and pole erection was completed.



Pending activities included stringing of the low voltage distribution network, and the construction of the solar array. The Government was negotiating with GIZ for an extension of the financing of the mini-grid solar arrays. The draft electric mobility strategy was produced and reviewed. The Government also concluded the signing of a memorandum of understanding (MOU) with TOTAL Energies to develop e-mobility solutions and a framework agreement for e-mobility and charging infrastructure was entered into with two partners. Technical studies also commenced on two pilot projects for net metering at the Kololo Independence Grounds and for the Amber House building.

The Energy Efficiency and Conservation Sub-programme performance was poor at 42.5%. The planned interventions under the sub-programme were the promotion of the use of energy-efficient equipment for industrial and residential consumers. A consultant was procured to develop an e-cooking baseline and strategy to accelerate the penetration of e-cooking in the cooking energy mix. Also, during the FY, awareness of energy efficiency was undertaken through the Energy Efficiency and Electric Mobility Conference in November 2022. Three new draft standards covering several areas in Energy Management among energy consumers were developed in conjunction with the Uganda National Bureau of Standards (UNBS) in areas of verification of energy savings. The dissemination of energy audit findings from five tea factories (Buhweju, Kayonza, Igara, Swazi, Kyamuhunga) and Awelo millers was undertaken. The draft Energy Efficiency Bill was approved by the Cabinet and consultations on the bill with key stakeholders were ongoing.

## Challenges

1. Limited financial capacity of some contractors and this is becoming a persistent problem in the sector. The contractors for both Kabale-Mirama, Kole-Nebbi-Gulu-Arua, and Gulu-Agago were under financial strain which was hindering the project works.
2. Continued vandalism on ongoing electricity transmission and distribution infrastructure due to the unregulated scrap trade. Currently, the 300MW generation at Karuma HPP cannot be fully evacuated due to the Karuma-Kawanda line that was rendered un-operational due to vandalism.
3. Transmission lines and rural electrification projects continue to experience delays due to land acquisition challenges. The delays on the ERT III project and work on several sections of the Mirama-Kabale and the Kole-Gulu-Nebbi-Arua projects can be attributed directly to this challenge.
4. The rate of new electricity connections on the grid has been declining due to reduced funding for free connections and the costs of connections that remain unaffordable for most of the rural population.

## Conclusion

Although the Sustainable Energy Development Programme takes up the largest share of the Energy Sector budget, it continues to grapple with several project implementation challenges. Most of these challenges can be traced to delayed procurement of works, poor contract management on ongoing projects, and challenges in the acquisition of RoW for the electricity infrastructure. The new and previously constructed electricity grid infrastructure continues to experience high levels of vandalism creating network downtime and the rate of connections under the programme remains way below the target. The budget allocation for funding renewable energy and energy efficiency activities under the programme remains very low for these well-intended activities to make any progress.



## Recommendations

1. The Public Procurement and Disposal of Assets Authority (PPDA) should explore revisions in the procurement law to prevent firms that offer the lowest bids from automatically being awarded the tendered works. This will prevent the challenges of firms bidding so low, and yet they lack the required financial capacity to undertake the works and better due diligence should be undertaken on firms before contracts are awarded.
2. The MEMD should engage the Ministry of Trade, Industry and Cooperatives to explore how trade in scrap metals can be regulated. Also, sensitization should be undertaken for those potential buyers of vandalized materials to eliminate the demand.
3. The Government should create a Special Fund for undertaking the free connections initiative with funds ring-fenced from being diverted and reliance on external funding alone should be minimized.



# CHAPTER 1: BACKGROUND

## 1.1 Background

The mission of the Ministry of Finance, Planning and Economic Development (MFPED) is, “*To formulate sound economic policies, maximize revenue mobilization, and ensure efficient allocation and accountability for public resources so as to achieve the most rapid and sustainable economic growth and development.*”

The MFPED through its Budget Monitoring and Accountability Unit (BMAU) tracks the implementation of programmes/projects by observing how values of different financial and physical indicators change over time against stated goals, indicators, and targets (how things are working). The BMAU work is aligned with budget execution, accountability, service delivery.

Starting in FY 2021/22, the BMAU is undertaking Programme-Based Monitoring to assess performance against targets and outcomes in the Programme Implementation Action Plans (PIAPs) of the third National Development Plan (NDPIII). Semi-annual and annual field monitoring of government programmes and projects is undertaken to verify the receipt and application of funds by the user entities and beneficiaries, the outputs and intermediate outcomes achieved, and the level of gender and equity compliance in the budget execution processes. The monitoring also reviews the coherency in implementing the PIAP interventions; the level of cohesion between sub-programmes; and the challenges of implementation.

The monitoring covered the following Programmes: Agro-Industrialization; Community Mobilization and Mindset Change; Digital Transformation; Human Capital Development; Innovation, Technology Development and Transfer; Integrated Transport Infrastructure and Services; Manufacturing; Mineral Development; Natural Resources, Environment, Climate Change, Land and Water Management; Public Sector Transformation; Sustainable Development of Petroleum Resources; and Sustainable Energy Development.

This report presents findings from monitoring the Sustainable Energy Development Programme for the budget execution period of 1<sup>st</sup> July 2022 and 30<sup>th</sup> June 2023.

## 1.2 Programme Goal

The goal of the Sustainable Energy Development Programme is to meet the energy needs of the country by providing adequate, affordable, clean, and reliable energy for sustainable socio-economic growth and development. The SED Programme consists of 4 sub-programmes namely: Generation, Transmission, Distribution and Rural Electrification, Renewable Energy Development, and Energy Efficiency and Conservation.

The lead MDA for the implementation of the programme is the Ministry of Energy and Mineral Development (MEMD), with other key implementing agencies being the Uganda Electricity Transmission Company Limited (UETCL) and Uganda Electricity Generation Company Limited (UEGCL).



## 1.3 Programme Objectives

The specific objectives of the programme are:

- Increase access and utilization of electricity
- Increase the generation capacity of electricity
- Increase adoption and use of clean energy, and
- Promote utilization of energy-efficient practices and technologies.

## 1.4 Programme Outcomes and Indicators

The NDP III outlines outcomes and the targets to be delivered under each of the programme objectives. The indicators in Table 1.1 will be used to measure the progress toward the outcomes of the programme.

**Table 1.1: Sustainable Energy Development Outcomes and Indicators**

Outcome	Indicators
<b>Objective 1: Increase access and utilization of electricity</b>	
Increased electricity access	Increase the percentage of households with access to electricity from 50% to 80%.
	Increase grid reliability from 88% to 90%.
	Increase electricity consumption per capita (kWh per capita) from 100kWh to 578kWh.
	Increase the length of High voltage transmission lines (km) from 2,354km to 4,354km.
	Increase the length of the distribution network from 45,423.1km to 70,000km.
<b>Objective 2: Increase electricity generation capacity</b>	
Increased electricity generation capacity	Increase electricity generation capacity from 1,252.3MW to 3,500MW.
<b>Objective 3: Increase adoption and use of clean energy</b>	
Increased energy consumption	Increase primary energy consumption (million tonnes of oil equivalent) from 15.2 to 21.74 million tonnes of oil equivalent.
<b>Objective 4: Promote utilization of energy-efficient practices and technologies.</b>	
Increased consumption of alternative clean cooking energy	Reduce total energy losses (%) on the distribution network from 19.6% to 12.6%.
Efficient energy utilization	Increase % of adoption of energy-efficient technologies from 30% to 50% across all consumer categories.

*Source: NDP III*



## CHAPTER 2: METHODOLOGY

### 2.1 Scope

This monitoring report is based on selected interventions in the Sustainable Energy Development Programme. The monitoring covered interventions implemented during FY 2022/23 (1<sup>st</sup> July 2022 - 30<sup>th</sup> June 2023). The interventions and respective outputs reviewed under each sub-programme; Ministry, Department, and Agency/(MDAs)/Vote/Local Governments are listed in Table 2.1.

**Table 2.1: Interventions, Outputs and Implementing Agencies**

Intervention	Outputs	Implementing Agency
Undertake preliminary development of large-generation plants	Construction of Nyagak III HPP Construction of Karuma HPP Completion of defects liability Period for Isimba HPP	UEGCL
Seek approvals for the construction of a nuclear power generation	Atomic Energy Amendment Bill prepared Awareness of the nuclear energy conducted Preparation for construction of a Centre for Nuclear Science and Technology conducted Local content strategy for nuclear energy development prepared Spent fuel and radioactive waste management strategy for Uganda prepared and implemented Bilateral and multilateral cooperation coordinated	MEMD
Expand and Rehabilitate the Transmission Network	Distance in km of high voltage lines added to the transmission grid Capacity of transformer capacity (MVA) added to the grid	UETCL
Expand and Rehabilitate the Distribution Network	No. of km of medium voltage lines added to the grid No. of km of low voltage lines added to the grid	MEMD MEMD
Reduce End User Tariffs	No. of Last-mile connections made	MEMD
Promote the use of new and renewable energy solutions	Increased deployment of new renewable energy solutions Off-grid mini-grids based on renewable energy promoted Development of grid-connected renewable energy systems Electric transport solutions promoted Net metering framework developed Technical capacity in renewable energy solutions developed Increased uptake in improved cook stoves	MEMD
Promote the use of energy-efficient equipment for both industrial and residential consumers	Utilization and adoption of efficient cooking techniques Energy management among high energy consuming facilities integrated and energy efficiency /conservation potential established Awareness of energy efficiency and sustainable energy utilization created Complimentary policies on energy efficiency developed	MEMD MEMD MEMD MEMD

*Source: Author's Compilation*



Monitoring involved analysis and tracking of inputs, activities, processes, outputs, and in some instances intermediate outcomes as identified in the Programme Implementation Action Plan (PIAP), Ministerial Policy Statements and Semi-Annual and Quarterly work plans, progress and performance reports of MDAs and LGs.

A total of 7 interventions in the MPS were reviewed. The 7 reviewed interventions translated into 90% coverage of the approved budget for the FY2022/23. The selected interventions monitored were:

- Undertake preliminary development of large-generation plants
- Finalize plans for the development of nuclear power generation
- Expand and Rehabilitate the Transmission Network
- Expand and Rehabilitate the Distribution Network
- Establish mechanisms to reduce the end-user tariffs
- Promotion of the use of new and renewable energy solutions
- Promote the use of energy-efficient equipment for both industrial and residential consumers

## 2.2 Approach and Sampling Methods

Both qualitative and quantitative methods were used in the monitoring exercise. The physical performance of interventions, planned outputs, and intermediate outcomes were assessed through monitoring a range of indicators. The progress reported was linked to the reported expenditure and physical performance.

A combination of random and purposive sampling was used in selecting interventions and outputs from the PIAPs, Ministerial Policy Statements (MPS), and progress reports of the respective Ministries, Departments, and Agencies for monitoring.

To aid mapping PIAP interventions against annual planned targets stated in the Vote MPS and quarterly work plans, a multi-stage sampling was undertaken at four levels: i) Sub-programmes ii) Sub-sub-programmes iii) Local governments, and iv) Project beneficiaries. Regional representation was considered in the selection of districts and outputs.

## 2.3 Data Collection and Analysis

### 2.3.1 Data Collection

The monitoring team employed both primary and secondary data collection methods. Secondary data collection methods include:

Literature review from key policy documents including, Ministerial Policy Statements (MPS) FY 2022/23; National and Programme Budget Framework Papers; A Handbook for Implementation of NDPIII Gender and Equity Commitments, PIAPs, (NDP III), quarterly progress reports and work plans for the respective implementing agencies, Quarterly Performance Reports, Budget Speech, Public Investment Plans, Approved Estimates of Revenue and Expenditure, project reports, strategic plans, policy documents, Aide Memoires and Evaluation Reports for selected programmes/projects.

Review and analysis of data from the Integrated Financial Management System (IFMS); Programme Budgeting System (PBS); Budget Portal; Quarterly Performance Reports and Bank statements from some implementing agencies.





Primary data collection methods on the other hand include:

- Consultations and key informant interviews with Institutional heads, project/intervention managers, household heads, and service beneficiaries at various implementation levels.
- Field visits to various districts, for primary data collection, observation, and photography.
- Call-backs in some cases were made to triangulate information.

### 2.3.2 Data Analysis

The data was analyzed using both qualitative and quantitative approaches.

Qualitative data was examined and classified in terms of constructs, themes, or patterns to explain events among the beneficiaries (interpretation analysis) and reflective analysis where the monitoring teams provided an objective interpretation of the field events. Quantitative data on the other hand was analyzed using advanced Excel tools that aided interpretation.

Comparative analyses were done using percentages, averages, and cross-tabulations of the outputs/interventions; intermediate outcome indicators, and overall scores. Performance of outputs/interventions and intermediate outcome indicators was rated in percentages according to the level of achievement against the annual targets. The sub-programme score was determined as the weighted aggregate of the average percentage ratings for the output/intermediate outcomes in the ratio of 65%: 35% respectively.

The overall programme performance is an average of individual sub-programme scores assessed. The performance of the programme and sub-programme was rated based on the criterion in Table 2.2. Based on the rating assigned, a BMAU colour-coded system was used to alert the policymakers and implementers on whether the interventions were achieved or had very good performance (green), good performance (yellow), fair performance (light gold), and poor performance (red).

**Table 2.2: Assessment guide to measure performance in FY 2022/23**

Score	Performance Rating	Comment
90% and above		Very Good (Achieved at least 90% of outputs and outcomes)
70%-89%		Good (Achieved at least 70% of outputs and outcomes)
50%- 69%		Fair (Achieved at least 50% of outputs and outcomes)
49% and below		Poor (Achieved below 50% of outputs and outcomes)

*Source: Author's Compilation*

### Ethical considerations

Introduction letters from the Permanent Secretary/Secretary to Treasury were issued to the respective MDAs monitored. Entry meetings were held with the Accounting Officers or delegated officers upon commencement of the monitoring exercise. Consent was sought from all respondents including programme or project beneficiaries. All information obtained during the budget monitoring exercise was treated with a high degree of confidentiality.

### 2.4 Limitations

- Limited credible outcome performance data in the programme institutions; in some cases, the analysis was done at the output level.



- Lack of reliable and real-time financial data on donor financing which was not accessible on the IFMS.
- Limited access to credible expenditure data especially for agencies/subventions that still operated manual accounting systems.

## 2.5 Structure of the Report

The report is structured into four chapters. These are the Chapter 1 - Introduction, Chapter 2 - Methodology, Chapter 3 - Programme Performance, and Chapter 4 - Conclusion and Recommendations respectively.



## CHAPTER 3: PROGRAMME PERFORMANCE

### 3.1 Overall performance

#### Financial Performance

The overall budget release under the programme was good at 102.1%. The good financial performance was due to a high release and expenditure on the externally funded projects which was 120%. The release and expenditure on the GoU-funded components were 81.1%. The programme financing by the end of the financial year is summarized in Table 3.1.

**Table 3.1: Financing of the Sustainable Energy Development Programme at 30<sup>th</sup> June 2023**

Sub-programme/ Cost Centre	Budget (Ug shs Bn)	Release (Ug shs Bn)	Expenditure (Ug shs Bn)	Release as % of Budget	Expenditure as % of Release
Generation	377.67	511.659	511.664	135.5	100.0
Transmission and Distribution	1273.52	1174.589	1174.097	92.2	100.0
Renewable Energy Development	0.6	0.388	0.387	64.7	99.7
Energy Efficiency and Conservation	0.68	0.449	0.454	66.0	101.1
Finance and Administration	33.188	32.82	23.325	98.9	71.1
<b>Overall Performance</b>	<b>1,652.47</b>	<b>1,687.09</b>	<b>1,686.60</b>	<b>102.1</b>	<b>100.0</b>

*Source: IFMS and PBS Quarterly Reports*

#### Physical performance

The overall performance of the programme was poor at 49.7% due to the slow implementation of the key deliverables such as the power transmission projects and the remaining works on the large hydropower generation projects (Table 3.2). The Transmission and Distribution Sub-programme was plagued by slow implementation due to land acquisition challenges, limited contractor capacity, and inefficiency in procurement. The Mutundwe-Entebbe Transmission Line was finally commissioned although works on several others such as the Mirama-Kabale, Gulu-Agago, and Kole-Gulu-Nebbi-Arua continued to face implementation challenges.

There were significant delays also noted on the remaining works at Karuma HPP and Isimba HPP attributed to several defects in the completed works. Karuma HPP was partially commissioned, but 3 generation units were yet to be commissioned due to defects in installed works. The Isimba HPP defects liability period ended without closing out all of the notified defects.

**Table 3.2: Summary of Performance for the Sustainable Energy Development Programme for FY2022/23**

Sub-programme	Performance (%)
Generation	52.2
Transmission and Distribution	54.1
Renewable Energy Development	50.0
Energy Efficiency and Conservation	42.5
<b>Overall Performance</b>	<b>49.7</b>

*Source: Author's Compilation*



### 3.2 Generation Sub-programme

The sub-programme objective is to ensure adequate generation capacity for economic development and it contributes to the programme outcome of “increased electricity generation capacity added to the grid”. The outcome indicator for the sub-programme is the generation capacity in MW added to the grid. The planned interventions under the sub-programme are: Undertake preliminary development of large generation plants and finalize plans and approvals for construction of a nuclear power generation plant.

#### Performance

The overall sub-programme performance was fair at 52.2 % (Table 3.3). The interventions partly met the planned target of increasing the generation capacity by commissioning of additional 300MW at Karuma HPP against the planned target of 600MW. The total budget for the interventions under the sub-programme was Ug shs 377.6bn, of which Ug shs 511.65bn was released and Ug shs 511.66bn was spent by the end of the financial year.

**Table 3.3: Performance of interventions under the Generation Sub-programme**

Intervention	Performance Rating	Remarks
Undertake preliminary development of large-generation plants		Fair performance of 53.3%. Half of the generation capacity of Karuma HPP was commissioned.
Finalize plans and approvals for nuclear power generation		Fair performance of 51.4%. Atomic energy bill approved by the cabinet. The MOU for the Nuclear Science Technology Centre was signed.
<b>Average performance intervention</b>		<b>Fair performance at 53.3%.</b>

*Source: Author's Compilation*

#### 3.2.1 Undertake preliminary development of large hydropower generation plants

The intervention is jointly implemented by Uganda Electricity Generation Company Limited (UEGCL) and the Ministry of Energy and Mineral Development (MEMD). The planned outputs under the intervention were the construction of Nyagak III HPP, Karuma HPP, and the completion of Isimba HPP defects liability.

#### Performance of the intervention

The performance of the intervention was fair at 53.3%. The budget for the intervention was Ug shs 376.7bn of which Ug shs 511.12bn was released and spent during the financial year. The expenditure exceeded the budget due to the payment of pending invoices on the Karuma HPP works totalling to Ug shs 150.87bn. The intervention partially achieved the main target of increasing the generation capacity by the addition of 300MW to the grid.

#### Construction works on Nyagak III HPP

Construction works on Nyagak III HPP were ongoing in Zombo District with overall progress at 93%. Completion of the project was delayed due to funding challenges because the private partners failed to obtain financing. The Government may be required to avail Ug shs 22bn in financing to complete the remaining works. The structural works on the access roads, dam structure surge tank, pipe conduit, penstock anchor blocks, and penstock piping were complete.



Civil works on the powerhouse were at 85% with the casting of equipment foundations complete. The ongoing works included; masonry walls, a gantry yard, a main inlet valve, and wall construction for the tail race. Electromechanical work involving the installation of two spiral casings and draft tubes was also ongoing. The delivery to the site of the transformers and turbine generators had been done. The manufacturing of the turbines was being undertaken. Progress on 34 blocks of staff housing was at 75% with electrical wiring, plastering, tiling, and plumbing completed. The construction of the power evacuation line had not commenced.



**L: Completed penstock and partially completed plant house building at Nyagak III HPP**

**R: Ongoing electromechanical installation works on the turbines at Nyagak III HPP powerhouse**



The major issue affecting the Nyagak III project was the delay by the project's private partners to obtain the planned loan financing whereas the project was at a critical stage of project implementation. This project needs a forensic audit to better determine the financial contribution the private partners have made.

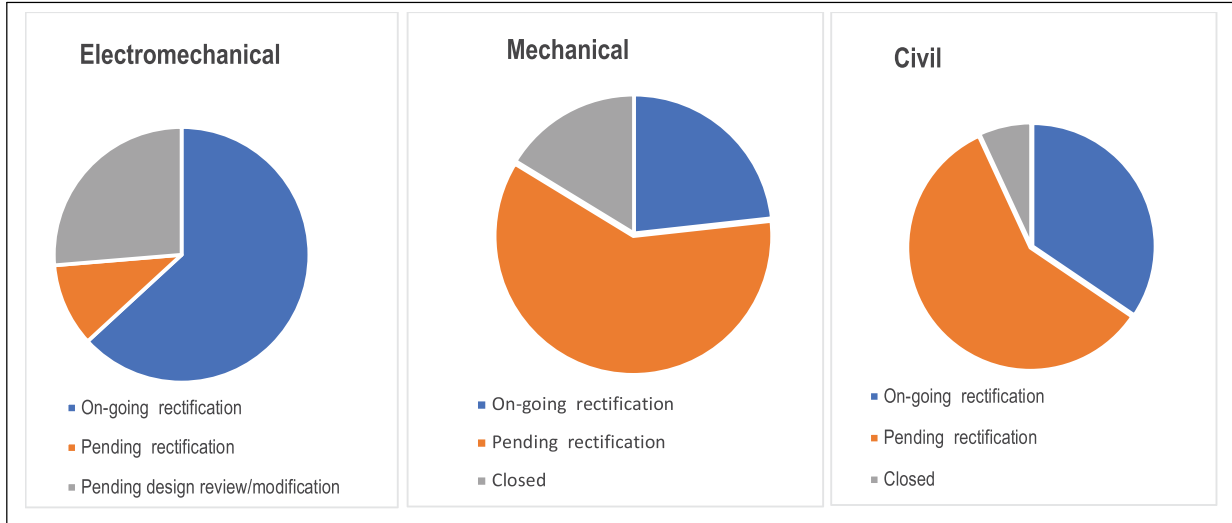
### **Completion of Karuma HPP works**

Construction works for Karuma HPP progressed from 99% at the beginning of the FY2022/23 to 99.9% at the end of the FY. The project contract period was granted a final extension up to August 2024 to allow the completion of the remaining works. The total gross certified payment to the contractor is USD 1,376,058,743; which equates to 98.39% of the original contract price of USD 1,398,516,759. The project is delayed by 54 months, with time progress at 114 months of the original 60-month contract duration.

The wet commissioning of units 1, 3 and 4 was undertaken commencing in November 2022. All major civil, electrical and electromechanical works at Karuma had been completed at the spillway, dam intake, powerhouse, substations and tunnels. The rectification of identified defects/snags progressed to 98%. The total number of snags identified on the project was 148 (29 civil, 43 mechanical and 76 electromechanical).

The delays in clearing of the identified snags has been greatly hampered by the contractual disagreements between UEGCL and Sino Hydro, and an adjudicator to the contract had not been nominated by MEMD to resolve some of the long outstanding issues. The progress of rectification for the different categories of defects is illustrated in Figure 3.1.

**Figure 3.1: Progress of rectification of defects at Karuma HPP**



*Source: UEGCL Reports/ Field Findings*

The major snags still to be resolved on the project were the replacement of the damaged log boom, works on increasing the height of the spillway wall and the addition of the trash cleaning machines at the power intake.

The overall completion progress for the transmission component of the project was 99.6%. The pending works on the 73.1km Lira-Karuma Transmission Line were completed and the Lira substation energized. The project however faces recurring incidents of vandalism on the already completed segments on the Karuma-Kawanda line and by the time of monitoring five vandalized towers were to be reconstructed. Also, five other towers found to be defective on inspection were to be redone at the contractor’s cost further delaying the full completion of the works.



**L: Installed plant operation and control screen for Karuma HPP**



**R: Karuma HPP intake section, with missing log boom**

The progress of the work on the Employer’s Permanent Camp was as follows: Completion of Zone A of Employer’s Permanent Camp, the main buildings of Zone B of Employer’s Permanent Camp were also completed. The pending works were landscaping and construction of the gatehouses for the different facilities.



Works on the leisure facilities such as the children's park, and sports facilities such as the football field, tennis courts and basketball courts were ongoing on the pavilions. The construction of the water treatment and storage system had been completed and the laying of the water transmission network was at 80% progress. The waste water treatment systems were also completed and tests were ongoing before the system could be connected to the buildings.

The construction of the 119 resettlement houses at Lapono Village for the vulnerable project-affected persons on the Karuma HPP had not commenced. The MEMD was still procuring a consultant to undertake an Environmental and Social Impact Assessment (ESIA) at the proposed construction site. The commencement of this construction is long overdue and some of the vulnerable PAPs have since died.

### Completion of Defects Liability Period for Isimba HPP

The work on the outstanding notified project defects at Isimba HPP continued during FY2022/23 but the Defects Liability Period (DLP) ended on 31<sup>st</sup> March 2023. The contractor was obliged to rectify all defects raised to that date. The main outstanding defect identified in the project was the excessive wear of the concrete along the spillway and spiral casing, and a model was being set up to run simulations so that the root cause could be identified. Completion of these repairs was planned for December 2025 and are estimated to cost the contractor USD 71 million.



**Plant house building and gate lifting hydraulic actuators at the Isimba HPP**

Another major snag identified during the operation of the power plant was the difficulty in opening and closing the spillway gates. The installation of the firefighting systems, although completed was never commissioned to ascertain its ability to properly operate during an emergency. The contractor also committed to replacing the current submersed heat exchanger mechanism that was found to be challenging for the operations and maintenance team to access.

The overall physical progress of works for the Employer's Camp was at about 85% by the end of June 30, 2023, on the 40 housing units. The work on the Community Development Action Plan (CDAP) components was at 50% progress and was negatively impacted by the low budget release to the project.

### 3.2.2 Finalize plans and approvals for construction of a nuclear power generation plant

The planned outputs under the intervention are: Atomic Energy Amendment Bill prepared; Awareness of nuclear energy conducted; Preparation for construction of a Centre for Nuclear Science and Technology conducted; Local content strategy for nuclear energy development prepared; Spent fuel and radioactive waste management strategy for Uganda prepared and implemented; Bilateral and multilateral cooperation coordinated; Uranium Exploration and evaluation supported.



## **Performance of the intervention**

The performance of the intervention was fair at 51.4%. The siting for the planned nuclear generation plant was completed and the community engagement commenced. The Nuclear Unit under MEMD also continued to engage and receive technical support from the International Atomic Energy Agency (IAEA). The budget allocation for this intervention was Ug shs 0.8bn, of which Ug shs 0.535bn was released and Ug shs 0.535bn was spent.

## **Atomic Energy Amendment Bill prepared**

Proposed amendments to the Atomic Energy Act, of 2008 were prepared with support from the Ministry of Justice & Constitutional Affairs and Atomic Energy Council, as part of the principles for amendment of the Act. The Cabinet reviewed the final draft principles for amending the Atomic Energy Act, 2008 and approved it on 12<sup>th</sup> June 2023.

## **Awareness of the nuclear energy conducted**

Created awareness among 100 project-affected persons in Bukungu Town Council, Buyende District on 5<sup>th</sup> August 2022, and Buyende District leadership engaged to close information gaps. The proposed 2,000MWe Buyende Nuclear Power Project was exhibited during the Renewable Energy Conference, 2022 at Speke Resort Munyonyo and the 2022 National Science Week at Kololo Independence Ground from 7<sup>th</sup> – 10<sup>th</sup> November 2022. A member of staff was trained on managing PAPs in municipalities with nuclear facilities from 31<sup>st</sup> – 4<sup>th</sup> November 2022 in Vienna, Austria with support from the IAEA.

## **Preparation for construction of a Centre for Nuclear Science and Technology conducted**

The project profile for the Centre for Nuclear Science and Technology was prepared and presented to the Development Committee. A needs assessment for the Centre for Nuclear Science and Technology in Central Uganda was conducted and the site selection report for the Centre for Nuclear Science and Technology was disseminated. Soroti University was selected as the possible host. A Memorandum of Understanding was signed with Soroti University on the establishment of the centre and a joint steering team was set up to oversee its implementation.

## **Local content strategy for nuclear energy development prepared**

The Nuclear Unit of MEMD drafted the Terms of Reference (ToRs) for the preparation of a Local Content Strategy for the Buyende Nuclear Power Project. A member of staff was trained on electric grid considerations and interactions with the Nuclear Power Plant from 26<sup>th</sup> – 30<sup>th</sup> September 2022 at Argonne National Laboratory, Chicago, Illinois, USA with support from IAEA.

## **Spent fuel and radioactive waste management strategy for Uganda prepared and implemented**

The Spent Fuel and Radioactive Waste Management Strategy for Uganda was reviewed and updated, while the ToRs for siting a Centralized Radioactive Waste Management Facility was drafted. The procurement process for the removal of Cobalt-60 Disused Sealed Radioactive Sources (DSRS) from Uganda was initiated by the IAEA. A member of staff was trained on the reuse and recycling of disused sealed radioactive sources from 7<sup>th</sup> – 11<sup>th</sup> November 2022 in Sarajevo, Bosnia and Herzegovina with support from the IAEA. Another member of staff participated in the Technical Meeting on the Management of Hazardous Waste arising from the Operation and Decommissioning of Nuclear Facilities from 15<sup>th</sup> – 19<sup>th</sup> May 2023 in Vienna, Austria.





## Bilateral and multilateral cooperation coordinated

Supported the Ministry of Foreign Affairs (MoFA) during the visit of His Excellency Sergey Lavrov, Minister of Foreign Affairs of Russia. Field visits were conducted in Masaka, Gulu, and Lira cities from 12<sup>th</sup> – 16<sup>th</sup> December 2022 to assess the status of Regional Animal Disease Diagnostic Laboratories. Baseline data was collected to guide the drafting of CPF 2024/30. Project designs for the IAEA TC Cycle 2024/25 were updated. Preparations for the Africa Nuclear Business Platform Conference and Exhibition scheduled for 14<sup>th</sup> – 17<sup>th</sup> March 2023 continued. A team led by the Hon. Minister of State for Energy participated in the 5<sup>th</sup> International Ministerial Conference on Nuclear Power in the 21<sup>st</sup> Century in the USA from 26<sup>th</sup> – 28<sup>th</sup> October 2022.

## Uranium exploration and evaluation supported

Detailed nuclear fuel resources exploration and evaluation was launched on 19<sup>th</sup> April 2023 at Sembabule District Headquarters and pitting of the Boma Uranium anomaly was conducted from 19<sup>th</sup> – 22<sup>nd</sup> April 2023. Two members of staff participated in the International Symposium on Uranium Raw Materials for the Nuclear Fuel Cycle: Innovation for Sustaining Future Resources and Production (URAM 2023) from 8<sup>th</sup> to 12<sup>th</sup> May 2023. Other four (04) members of staff participated in the IAEA training on Uranium Exploration Techniques and Geological Mapping from 12<sup>th</sup> – 16<sup>th</sup> June 2023 in Entebbe. A detailed analysis of the performance of the Generation Sub-programme interventions is in Table 3.4.

**Table 3.4: Performance of the Generation Sub-programme by 30<sup>th</sup> June 2023**

Interventions	Outputs	Annual Budget (Ug shs)	% of Budget Received	% of Budget Spent	Annual Target	Physical Score (%)	Remarks
Undertake preliminary development of large-generation plants	Construction of Nyagak III HPP	3.50	82.56	100.0	100.00	60.00	Nyagak III works progressed to 93.3% with dam civil works completed
	Construction of Karuma HPP	95.29	149.92	100.0	100.00	50.00	Overall progress at 99.9%. Units 1, 3, and 4 were commissioned.
	Completion of defects liability Period for Isimba HPP	67.88	84.18	100.0	100.00	50.00	Defects liability period expired in March 2023. But there are repairs still required at the contractor's cost.
Finalize plans and approvals for nuclear power generation	Atomic Energy Amendment Bill prepared	0.10	53.10	715.3	100.00	60.00	Cabinet approved principles for amending the Atomic Energy Act 2008.
	Awareness of the nuclear energy conducted	0.16	66.38	100.8	100.00	60.00	100 PAPs sensitized in Buyende.
	Preparation for construction of a Centre for Nuclear Science and Technology conducted	0.16	66.38	100.8	100.00	40.00	The steering team for the technology centre created an MOU signed to oversee the implementation.



Interventions	Outputs	Annual Budget (Ug shs)	% of Budget Received	% of Budget Spent	Annual Target	Physical Score (%)	Remarks
	Local content strategy for nuclear energy development prepared	0.08	66.38	100.8	100.00	60.00	Drafted the local content strategy.
	Spent fuel and radioactive waste management strategy for Uganda prepared and implemented	0.08	66.38	100.8	100.00	40.00	Staff trained on the reuse and recycling of disused radioactive sources.
	Bilateral and multilateral cooperation coordinated	0.08	66.38	100.8	100.00	60.00	Attended the International nuclear conference in Oct 2022.
	Uranium exploration and evaluation support.	0.10	53.10	100.8	100.00	40.00	Detailed nuclear fuel resources exploration and evaluation launched.
		377				53.33	<b>Output performance</b>
Outcomes Performance							
	<b>Outcome Indicator</b>			<b>Annual Target</b>	<b>Achieved</b>	<b>Score (%)</b>	<b>Remark</b>
	Increased generation capacity added to the grid			600	300	50.0	Karuma HPP partially commissioned
	<b>Average Outcomes performance</b>					<b>50.0</b>	
	<b>Overall Sub-Programme Performance</b>					<b>52.2</b>	

Source: Field Findings and MEMD Q4 Reports

### Sub-programme Challenges

1. Several major defects were not yet addressed on the two hydropower dams even after commissioning which poses a risk that the two projects may be difficult to operate and maintain.
2. Several contractual disputes between the contractor and the Government are still unresolved at Karuma HPP due to a delay by MEMD in appointing an adjudicator.

### Conclusion

Overall, although the Generation Sub-programme continued to make progress towards increasing the power generation capacity on the grid, there were delays in the delivery of all the planned outputs. Commissioning of works at Karuma HPP was only partially done and the 3 remaining units were still plagued by defects. While the DLP period of Isimba HPP ended, major defects on the project still needed to be addressed as a result of technical capacity gaps that resulted in inadequate supervision. The UEGCL and MEMD should ensure that the remaining works and defects on the major projects were addressed conclusively so that the handed over plant is in good running condition.



## Recommendations

1. The UEGCL and MEMD should ensure that all pending identified defects and issues at Karuma and Isimba are resolved.
2. The appointment of an adjudicator to help resolve the various contractual disputes on the Karuma HPP needs to be done as soon as possible by MEMD so that the contentious issues on the project can be resolved.

### 3.3 Transmission and Distribution Sub-programme

The sub-programme is responsible for promoting; increased investment in power transmission and rural electrification. The sub-programme contributes to the programme outcome of “*increased access and utilization of electricity*”. The outcome indicators for the sub-programme are; increased electricity access and reduction in losses on the grid.

The planned interventions under the sub-programme are: to expand and rehabilitate the transmission network, expand and rehabilitate the distribution network and reduce end-user tariffs. The sub-programme performance was fair at 54.1% with a budget of Ug shs 1,273.52bn, while the released funds amounted to Ug shs 1,174.589bn and the total expenditures was Ug shs 1,174.097bn.

There were implementation challenges in the execution of the transmission and rural grid extension projects due to delays in material delivery, land acquisition challenges, and increasing cases of vandalism on ongoing projects. The level of electricity access was estimated at 22% as compared to the planned target of 35%.

#### Performance of interventions

The overall performance of the interventions under the sub-programme was poor at 49.3% (Table 3.5). Under the intervention to expand and rehabilitate the distribution network, 6,129km and 10,690km of medium voltage and low voltage lines were built against an annual target of 10,000km for both. The intervention to expand the transmission network performed poorly with only 417.8km lines added to the grid against a target of 2,600km. The other intervention to establish mechanisms to reduce the end-user tariffs performed poorly adding only 16,084 of the planned 300,000 new free connections to the grid with access to grid electricity at 22%.

**Table 3.5: Intervention performance for Transmission and Distribution Sub-programme**

Intervention	Performance Rating	Remarks
Expand and Rehabilitate the Transmission Network		Poor performance of 40%. Only the Mutundwe-Entebbe line was completed. Most projects had works delayed due to limited capacity of contractors and delayed payment of invoices.
Expand and Rehabilitate the Distribution Network		Good performance of 80.6%. Several km of MV and LV were completed countrywide.
Reduce End User Tariffs		Poor performance. Only 16,034 free connections were made out of the planned 300,000 annual target.
<b>Overall intervention performance</b>		<b>Poor performance at 49.3%.</b>

*Source: Authors' Compilation*

### 3.2.1 Expand the Transmission Network to Key Growth Areas

The intervention is the responsibility of Uganda Electricity Transmission Company Limited (UETCL) and the Ministry of Energy and Mineral Development (MEMD). The performance indicators under the intervention were: the number of kilometres of high voltage lines added to the grid, and the distance in km of the rehabilitated transmission network. The major planned outputs under the intervention were the following transmission projects:

- Entebbe-Mutundwe Expansion Project
- 132kV Mirama-Kable Transmission Project
- Grid Expansion and Re-enforcement Project
- Gulu Agago Transmission Project
- Masaka-Mbarara Expansion
- Kampala Metropolitan Transmission Project
- Kikagati-Nshongezi and power supply to industrial parks

The intervention performance was poor at 40%. During the first half of FY2022/23, the long-delayed Lira-Karuma Transmission Line was completed and energized. In quarter 4 of the FY, the works on the Mutundwe-Entebbe Transmission Project were completed and the project energized. Works on other ongoing projects such as the Kabale-Mirama, Gulu-Agago, and Kole-Gulu-Nebbi-Arua transmission projects were progressing at a slow pace and were behind schedule due to failure by contractors to adequately mobilize for the works.

#### Entebbe-Mutundwe Expansion Project

The Entebbe-Mutundwe Expansion Project objective is to provide reliable and quality power to Entebbe town and its environs. The scope of the project is the construction of a new 132kV substation at Entebbe town, an extension of the Mutundwe 132kV busbar and a 24 km double circuit 132Kv transmission line from Mutundwe substation to the new Entebbe substation.

The budget was Ug shs 8.21bn of which the GoU funds with Ug shs 14.72bn released and spent during FY 2022/23. The project disbursed an extra Ug shs 6.78bn to clear pending invoices on the works for the substation and transmission line. By 30<sup>th</sup> June 2023, disbursement stood at Euro 9.46 million (63%) for the loan component, while for the grant component, Euro 5.4 million (91%) had been disbursed.



The contractors for both Lot 1 and Lot 2 had pending unpaid invoices which contributed to the low disbursement of the loan amount. Under Lot 1, the contractor National Contracting Company (NCC) had invoices totalling Euro 900,000 pending payment by KfW, and EUR 250,000 retention money pending payment by UETCL. Under Lot 2, the contractor Xian had invoices totalling Euro 2 million pending payment by KfW. This delay in payment created cash flow challenges for the contractors.

The contract for Lot 1 commenced on 10<sup>th</sup> August 2018 and was due to end on 10<sup>th</sup> February 2020 but was extended to 31<sup>st</sup> March 2023. Lot 2 initial contract date was from 16<sup>th</sup> August 2018 to 14<sup>th</sup> April 2023. Both Lot 1 and Lot 2 contracts received final extensions up to 30<sup>th</sup> August 2023 to complete the remaining works.

Overall progress was 98% with most of the works substantially completed by 30<sup>th</sup> June 2023. The extension of the Mutundwe 132/33/11 kV substation by two-line bays and construction of a new 132/33kV double bus bar substation at Entebbe with two-line bays was completed and substations were energized in May 2023. Loading of the substation in Entebbe had commenced and a load of 14MW was added to the substation, with more load to be added by the distribution network operator UMEME. The contractor for Lot 2 was handling minor pending activities at the substations which included: the installation of access control, fire suppression systems, and final painting of the plant house walls.

However, the acquisition of land for the transmission line corridor showed poor progress. The percentage of the paid transactions had stagnated at 85% for over six months (899 of the 1,053 PAPs paid) with only 20.2km of the 28km acquired. The UETCL should be more vigilant to clear the pending ROW. Titling of the line corridor had not been done due to the lack of a RAP consultant that was yet to be procured.

### **Construction of 132 kV Mirama-Kabale Transmission Project**

The scope of the project is to construct an 85km transmission line from the Mirama substation and connect it to a newly constructed substation at Kabale, and construction of rural grid extension lines in the region. The funding for the project was GoU (Ug shs 40bn) and Islamic Development Bank (IsDB) loan of USD 83.75 million (USD 37.82 million for the transmission component and USD 45.93 million for the rural grid extensions). The project budget for FY2022/23 was Ug shs 20.13bn of which Ug shs 16.63bn was released and spent.

By 30<sup>th</sup> June 2023, USD 9,831,288 (26%) of the total loan amount of USD 37.82 million was disbursed. The low disbursement is due to the fact that only transmission works were on-going and other works for the substations had just commenced in July 2023. There was a long pending payment of USD 600,000 due to the Lot 1 contractor. The contract for Lot 1 (construction of the transmission line) commenced on 8<sup>th</sup> June 2020 and was expected to end on 8<sup>th</sup> December 2021, but was extended to 27<sup>th</sup> May 2023, which was also not met, thus a new completion date of February 2024 was proposed.

The progress of the works on the T-line was as follows: 228 of the planned 294 foundations were completed, and 111 of the planned 294 towers were erected. Delivery of a second batch of materials for 100 towers was done, leaving a batch of materials for 87 towers pending. However, the contractor had not been paid the invoice for the delivered tower materials.

The contract for Lot 2 (Kabale 132/33 kV substation and extension of the 132kV Busbar at Mirama Substation) commenced on 21<sup>st</sup> March 2023, and works started on 3<sup>rd</sup> July 2023. The civil works at the substation site were at the site levelling stage.



**Completed towers on a section of the Mirama-Kabale Transmission Line in Kabale District**

### **Grid Extension and Re-enforcement Project (GERP)**

Under the World Bank-funded Grid Extension and Re-enforcement Project (GERP), works were ongoing to connect West Nile to the national grid through the construction of 294 km of 132kV double circuit transmission line from Kole, through Gulu and Nebbi, to Arua as well as new four substations at Kole, Gulu, Nebbi and Arua with a transmission interconnection from Gulu to Olwiyo.

The project budget was Ug shs112.98bn, with Ug shs 15.5bn released and spent during the FY. The loan disbursement at the end of the FY was SDR 47.885 million which is 74.4% of the total loan amount. At the end of FY 2022/23, the overall progress of the transmission works was at 86%. A total of 806 foundations had been constructed (90%) and 762 towers were erected (85%) out of 897 locations. Stringing was 23.3% complete with 76.6km of the 289km having been strung.



**Completed plant house building, equipment structures and busbar gantries in the new 132kV Kole switchyard**

Overall progress of construction of the Kole and Gulu substations (Lot 2) increased to 93% with all equipment foundations erected and construction of the gantries and installation of the power transformers was completed. Progress of construction of Nebbi and Arua substations (Lot 3) increased to 92.2% with all power transformers and gantries installed and the construction of the control room building at an advanced stage. Commissioning tests had progressed to 25% for Lot 2 and 15% for Lot 3.



Compensation of Project Affected Persons was 91% (3,236/3,566) complete. Construction of resettlement houses for physically displaced households that opted for in-kind resettlement was at 73% complete. Twenty-nine (29) were handed over to PAPs, three (3) were completed and were to be handed over to the beneficiaries, and nine (9) houses were awaiting clearance of snags before handover. Construction of 27 houses was ongoing and an additional 6 houses were yet to be constructed (procurement of a contractor was ongoing).

### **Gulu-Agago Transmission Project**

During the FY2021/22, construction of an 83km transmission line connecting Gulu substation to a newly constructed substation at Agago commenced. The funding of the project is a 40 million Euro loan from KfW and the aim is to evacuate electricity from Agago and Achwa hydropower plants.

The project budget during the FY 2022/23 was Ug shs 232bn, of which Ug shs 218.789bn was released and spent. The amount disbursed by 30<sup>th</sup> June 2023 was Euros 9.670 million (24.1%) of the EUR 40 million loan.

Overall project construction progress was at 75%, and behind schedule having past the initial planned completion date of March 2023. Construction works for the transmission line showed fair progress, while the substation performance was poor. The contract for Lot 1 works commenced on 14<sup>th</sup> September 2021 and was due to end on 14<sup>th</sup> March 2023, but was extended to 30<sup>th</sup> June 2023, although the works were not completed by that date and a final time extension had been granted up to 15<sup>th</sup> October 2023.

A total of 235 out of 254 (92.5%) foundations were complete, 220 towers erected, and 43km of the 83km of conductor for the line route length strung. The 19 pending foundations were in locations with rocky geology which had delayed work in those areas. Blasting with explosives on 13 foundation locations in the rocky areas had commenced, but progress was poor due to the failure of the contractor to mobilize additional resources for rock drilling. The works on the remaining six foundations continued to be delayed by Right of Way (RoW).

The RAP implementation was at 98%, with 464 of the 473 project-affected persons (PAPs) paid. Re-evaluation for the pending nine cases was ongoing, and the UETCL should expedite this to avail the full corridor to the contractor. Additionally, construction of the resettlement houses had not begun by 30<sup>th</sup> June 2023. The delayed RAP implementation therefore constrained the progress of the tower erection and stringing activities for the line.

The contract for Lot 2 works commenced on 15<sup>th</sup> September 2021 with an initial end date of 15<sup>th</sup> March 2023, which was extended to 30<sup>th</sup> June 2023 and later to 30<sup>th</sup> September 2023 to finalize the remaining works. Overall substation works were at 82%.



#### **Ongoing works at the 132kV Agago substation**

**Gulu and Agago HPP switch Yard:** Casting of the equipment foundations and erection of equipment supports at Gulu and Agago HPP switch yard was completed and the 132kV bays extension at both switch yards was installed. Works at the Agago HPP plant house were at 85% with pending activities being: floor works, cable laying, panel installations and graveling of the substation.

**Agago Substation:** Works at Agago Substation registered slow progress. The equipment was being erected, but there were delays in the completion of the plant house which was still at the roofing level. Some equipment such as protection and control panels were yet to be delivered. The contractor for the substation was grappling with poor cash flow due to delayed payment of invoices resulting in poor progress of works.

#### **Masaka-Mbarara 400kV Transmission Line Project and Associated Sub-Stations**

The project is jointly funded by Kreditanstalt für Wiederaufbau/German Development Bank (KfW), Agence Française de Développement (AFD)/ French Development Bank, and the Government of Uganda. The KfW loan is EURO 35 million, while the AFD loan amount is EURO 37.1 million.

The project scope comprises: the construction of a 132km long 400 kV double circuit transmission line between the 220kV Masaka substation and the 220kV Mbarara North substation and the addition of two new line bays at both Masaka and Mbarara substations.

The project budget was Ug shs 22.88bn while Ug shs 22.365bn was released and spent during the FY. The disbursement on the AFD loan was EUR 120,267 (0.32%) with a loan closing date of 31<sup>st</sup> December 2024. The disbursement on the KfW loan was Euro 97,609 (0.28%) with the loan closing date of 30<sup>th</sup> June 2023, and the request for an extension of the loan was still awaiting approval by the funders.

The low disbursement on the loan funds was due to delay in commencement of works since the procurement of the Engineering, Procurement and Construction (EPC) contractors was yet to be concluded. This delay was attributed to the need to re-evaluate the bids after the initial evaluation





had been concluded on 30<sup>th</sup> August 2022 for Lot 1 and 20<sup>th</sup> September 2022 for Lot 2. The new target is to have the entire process including the contract signature completed by 31<sup>st</sup> August 2023.

The RAP implementation was at 64% (1,704 of the 2,650 PAPs) compensated. A total of 211 (37%) of the original land titles were received from the PAPs out of the expected 572 land titles. The sub-division of 83 out of 162 titles was completed by the consultant and returned to UETCL.

### **Kampala Metropolitan Transmission System Improvement Project**

The Kampala Metropolitan Transmission System Improvement Project aims to reinforce the electricity grid in the Kampala metropolitan area for a reliable future supply of electricity. The project funding is a loan of Japanese Yen (JPY) 13.659bn from the Japan International Corporation Agency (JICA), the cost of the Resettlement Action Plan is to be covered by GoU counterpart funding. The loan signature date was 26<sup>th</sup> April 2018.

The scope of the project includes: Construction of a new Mukono 3x125MVA, 220/132kV substation; new Buloba 2x125MVA, 220/132kV substation; a new Kawaala 2x40MVA 132/33kV substation; 1x20MVA 132/11kV Upgrade), Mutundwe Substation reconfiguration to double Busbar (upgrade), procurement of a new mobile substation 1x20MVA, 132/33kV; procurement of a new 1x250MVA 220/132kV power transformer for Bujagali Substation; Reconductoring of Mukono-Kampala North; Kampala North-Lugogo; Kampala North- Mutundwe transmission lines to High Temperature Low Sag (HTLS) Conductor.

The loan was signed on 26<sup>th</sup> April 2018, and loan effectiveness was achieved on 21<sup>st</sup> July 2018. The first loan closure date was 21<sup>st</sup> August 2026. The disbursement on the loan by 30<sup>th</sup> June 2023 was JPY 658.464 million (4.82%). The low disbursement is due to delayed completion of the designs and tender documents due to COVID-19 travel restrictions which in turn delayed the procurement of the contractors for the works. The draft contract for Lot 1 - Construction of Buloba Substation and associated transmission lines and upgrading of Mutundwe and Bujagali substations was approved by the Solicitor General but was pending UETCL Board approval.

The draft contract for Lot 2 - Construction of the new Mukono substation and associated transmission lines, upgrading of Kawaala Substation and reconductoring Mukono-Kampala North; Kampala North-Lugogo; Kampala North-Mutundwe transmission lines were also pending final approval by the UETCL Board. The contract for Lot 3 - supply of a mobile substation (132/33-11kV) was signed on 19<sup>th</sup> May 2023 and an advance payment had been made to the supplier.

Implementation of the RAP was progressing well and 92% of the 2,654 PAPs on the project had been compensated. The corridors of the transmission line and substations along the Mukono, Kawaala and Buloba project area had been demarcated and the substation land was procured. The extra land required in Mukono was acquired and presently batching and payments are ongoing and handled by the UETCL team.

### **3.2.2 Establish mechanisms to reduce the end-user tariffs**

This intervention aims at increasing the number of consumers connected to the grid through the implementation of the free connections policy and provision of a credit support facility in support of wiring for on-grid household & Small and Medium Enterprise (SME) connections and three-phase connections for commercial enterprises. The output indicator for this intervention is the number of new connections undertaken. This intervention is being undertaken by MEMD and Uganda Electricity Credit and Capitalization Company (UECCC).



Under the Free Connection Policy<sup>5</sup>, a total of 16,034 out of 300,000 planned connections were made country-wide using GoU funding and financial support from several development partners<sup>6</sup>. The budget for the free connections policy was Ug shs 21.5bn of which Ug shs 16.48bn was released. The low level of connections was due to low level of funding and the released GoU funds for this output prioritized payment of outstanding arrears from the previous FY. Financing by Agence Française de Développement (AFD) to implement about 43,000 connections was opened up by the funder. Implementation agreements have been signed and procurement is ongoing for the materials.

A framework contract for the supply of 50,000 connection materials was signed under GoU funding. The first call-off orders for 15,000 connections were issued and delivery was expected in Q1 of FY 2023/24. Connection materials to make about 54,000 with funding from the African Development Bank (AfDB) were under procurement but had not been delivered for the last-mile connections to begin.

Approval to start production for materials to make 170,000 connections under financing from China Exim Bank was issued to the supplier and the first batch of 18,200 meters had been delivered and were to be handed over to UMEME to begin connections. Batch 2 of 20,000 meters had been shipped but manufacture of remaining meters (131,800) under batch 3 was still ongoing.

The Electricity Access Scale-up Project (EASP) with plans to finance connections of over 1,070,000 beneficiaries was approved by the World Bank Board. The project fulfilled the effectiveness conditions in June 2023, and most staff under the project have been recruited.

A detailed report on the breakdown of the free connections made using the different funding sources by the various service providers in FY2022/23 is given in Table 3.6.

**Table 3.6: Breakdown of free electricity connections by 30<sup>th</sup> June 2023**

Service Provider	AfDB	GoU	IDB	KfW	KUWAIT	Grand Total
UMEME	8,450	277	2	1,108	-	9,837
UEDCL	-	5,400	24	-	-	5,424
ENGIE EQUATORIAL	-	637	-	-	-	637
KIL	-	6	50	-	-	56
PACMECS	-	44	36	-	-	80
KIS	-	-	-	-	-	-
KRECS	-	-	-	-	-	-
<b>Grand Total</b>	<b>8,450</b>	<b>6,364</b>	<b>112</b>	<b>1,108</b>	<b>-</b>	<b>16,034</b>

*Source: MEMD*

### 3.2.3 Expand and Rehabilitate the Distribution Network

This intervention aims to undertake grid expansion and densification, evacuation of small generation plants and quality of supply projects. The expected outputs under this intervention are to expand and rehabilitate the distribution grid in rural areas and, off-grid and mini-grid distribution lines constructed. The output indicators under the intervention are some kilometres of low voltage and medium voltage constructed. The target for FY2022/23 was the construction of 10,000km of medium voltage networks and 10,000km of low voltage networks.

<sup>5</sup> Potential beneficiary are those who require either a no-pole or one pole service for connection to the grid.

<sup>6</sup> World Bank, Islamic Development Bank, African Development Bank, Kreditanstalt für Wiederaufbau (KfW).



The performance of the intervention was good and 6,129 km of medium voltage and 10,690 km of low voltage networks were completed under the several projects ongoing projects. These projects were: The Rural Electrification Project, Grid Rural Electrification Project, Energy for Rural Transformation III, Uganda Rural Electrification Access Project and Demand Gap through the Accelerated Rural Electrification Programme.

### **Rural Electrification Project**

Under the Rural Electrification Project (REP), works implemented with Islamic Development Bank Phase II funding in Northern region (Agago, Apac, Dokolo, Katakwi, Kitgum, Kole, Lira, Pader) and Western region (Ibando, Isingiro, Kabale, Kanungu, Kisoro, Kyenjojo, Mbarara, Mitooma, Kabarole, Kamwenge, Ntungamo, Rukungiri, Rubirizi) were completed. The defects liability monitoring of the completed works was completed.

Overall progress of GoU funded schemes under REP (Lots 1, 2, 3, 4, 5, 7 and 8) in the different districts countrywide progressed slowly due to funding constraints. Works under GoU-funded Lot 1 (Central and Rwenzori service Territories), Lot 2 (Mid-Western, South and Central service territories) and Lot 3 (Western, South, South Western territories), were at 90% progress. Schemes under Lot 4 (Buliisa and Gulu) and Lot 5 in the Eastern region (Budaka, Mbale, Bukedea, and Kumi) were completed and under defect liability monitoring.

The procurement for GoU-funded Lot 6 in Eastern Uganda (Buyende, Kamuli, Mayuge, and Tororo) was not completed due to the administration review by the PPDA. Transformer installation was ongoing under Lot 7 (Kiboga, Kyankwanzi) schemes and schemes under Lot 8 in the Central region (Buikwe, Mukono, and Nakaseke) had been completed and were under defects liability monitoring.

Under the Kuwait-funded projects, works on Lot 1A in the districts of Kibaale, Kiryandongo and Nebbi were completed and commissioned. The pending component on the project was the delivery of meters for the connection of consumers. Works under Lot 1B in the South Western region (Bushenyi, Kasese, Mitooma and Rukungiri) stagnated at 62% because the contractor had been terminated.

### **Energy for Rural Transformation III**

The construction of rural grid extensions under the Energy for Rural Transformation (ERT) Phase III with funding from the World Bank (IDA)<sup>7</sup> continued in several parts of the country. The components planned under the project are: off-grid energy access for grid extensions and connections, off-grid energy access for solar PV installation for public institutions in rural areas provision of credit facilities to enhance electricity access and quality standards enforcement support, and lastly, institutional strengthening and impacts monitoring to finance transaction advisor (TA) and capacity development to accelerate electricity access and support the Government to carry out an impact monitoring and evaluation of ERT III.

The project completion date was extended from 30<sup>th</sup> June 2023 to 30<sup>th</sup> June 2024 to allow completion of pending works. The progress of the project was affected when the funder halted works for the grid extension lines in October 2022 due to the following reasons: contractors undertaking works before PAPs were compensated; delayed procurement of supervision consultants for line construction and encroachment on forest reserves without proper restoration plans and compensation. Works were allowed to resume on a case by case for the different lines and the detailed progress of the different lines under the project is summarized in Annex 2.

<sup>7</sup> Loan of USD135 million and a grant from the Global Environment Facility (GEF) Trust Fund of USD 8.2 million.



## Bridging the Demand Supply Gap through the Accelerated Rural Electrification Programme (BDSGAREP)

Under Bridging the Demand Gap through the Accelerated Rural Electrification Programme (BDSGAREP)<sup>8</sup>, the government was targeting to electrify a total of 287 sub-county headquarters and surrounding areas in all the regions of the country.

The total contract sum for the project is USD 212,669,840.08 with USD 133,219,420.73 disbursed by the end of FY2022/23. The budget for FY2022/23 was Ug shs148.82bn, while the release was Ug shs 113.78bn, and expenditure was Ug shs113.94bn. The project got supplementary GoU funding of Ug shs 161 million.

The progress on the project was initially hindered when the first supervising consultant (Eptisa SpA) absconded from the contract which has affected the certification of issued invoices for the past year. This has since been rectified with the procurement of M and E Associates to undertake the supervision of the remaining works in June 2023.

The overall progress of the BDSGAREP was at 87%, with the construction of several electricity networks completed by the end of the financial year 2022/23. A total of 3526.18km out of 3,534.95 km of medium voltage, (59%) 7431.89 out of 7,424.69km of low voltage lines, and installation of 1666 out of 1,952 distribution transformers had been completed. The detailed progress of the works on the 33kV grid extension and low voltage networks is given in Table 3.7.

**Table 3.7: Progress of Bridging the Demand Supply Gap through the Accelerated Rural Electrification Programme**

Region	Parameters	Length (Km)		MV & LV DISTRIBUTION NETWORK COMPONENT						
		MV	LV	Pole Erection		Dressing		Stringing (Km)		Transformer Installation
				MV	LV	MV	LV	MV (Km)	LV (Km)	
Eastern Region	Approved scope	1,088.72	3,064.58	15,795	60,900	13,528	66,838	1,088.72	3,064.58	700
	As-Built Scope To-date	1,088.72	3,064.58	13,874	54,017	11,964	59,447	954.66	2,734.37	567
	<b>% Progress</b>			<b>87.84%</b>	<b>88.70%</b>	<b>88.44%</b>	<b>88.94%</b>	<b>87.69%</b>	<b>89.22%</b>	<b>81.00%</b>
Central Region	Approved Scope	926.65	1,673.85	12,819	33,890	10,993	38,028	926.65	1,673.85	480
	As-Built Scope To-date	926.65	1,673.85	10,519	26,950	9,065	30,341	757.43	1,321.85	390
	<b>% Progress</b>			<b>82.06%</b>	<b>79.52%</b>	<b>82.46%</b>	<b>79.79%</b>	<b>81.74%</b>	<b>78.97%</b>	<b>81.25%</b>
South Western Region	Approved Scope	731.78	1,711.76	11,450	35,091	8,694	38,724	735.17	1,750.37	475
	As-Built Scope To-Date	731.78	1,711.76	10,650	31,781	7,953	35,038	685.09	1,586.97	418
	<b>% Progress</b>			<b>93.01%</b>	<b>90.57%</b>	<b>91.48%</b>	<b>90.48%</b>	<b>93.19%</b>	<b>90.66%</b>	<b>88.00%</b>

<sup>8</sup> Funding by a USD 212.669 million loan from China-EXIM Bank



Region	Parameters	Length (Km)		MV & LV DISTRIBUTION NETWORK COMPONENT						
		MV	LV	Pole Erection		Dressing		Stringing (Km)		Transformer Installation
				MV	LV	MV	LV	MV (Km)	LV (Km)	
Northern Region	Approved Scope	788.08	989.55	10,062	19,351	8,494	20,976	774.98	959.69	297
	As-Built Scope To- date	788.08	989.55	9,954	19,261	8,403	20,884	765.74	954.95	291
	<b>% Progress</b>			<b>98.93%</b>	<b>99.53%</b>	<b>98.93%</b>	<b>99.56%</b>	<b>98.81%</b>	<b>99.51%</b>	<b>97.98%</b>
Overall Total	Approved Scope	3,535.23	7,439.73	50,126	149,232	41,709	164,566	3,525.52	7,448.49	1,952
	As-Built Scope To- date	3,535.23	7,439.73	44,997	132,009	37,385	145,710	3,162.92	6,598.12	1,666
	<b>% Progress</b>			<b>89.77%</b>	<b>88.46%</b>	<b>89.63%</b>	<b>88.54%</b>	<b>89.71%</b>	<b>88.58%</b>	<b>85.35%</b>

**Source: Field Findings**

Works on the 11kV distribution schemes under the project totalling 310km of Medium Voltage lines, 798 Low Voltage lines, and 179 distribution transformers have not yet commenced as the contractor awaited the determination of his claims that were submitted. The review process of the claims and engagements with the contractor were ongoing.

### Uganda Rural Electricity Access Project (UREAP)

Under the Uganda Rural Electrification Access Project (UREAP)<sup>9</sup>, the scope is to construct a total of 1,427km of medium voltage lines, 1,170.7km of low voltage lines, installation of 500 transformers, and a 33kV submarine cable connection to Bugala Island in Kalangala District and 10,739 last mile connections at commissioning. The project consists of Lots 1-8 and Lots 10-13 for additional works.

The total budget for the project during FY2022/23 was Ug shs 131.57bn with Ug shs 95.236bn released and Ug shs 95.229bn. The overall progress of UREAP was 84% as of 30<sup>th</sup> June 2023 with the overall progress reported at 88.85% for Lots 1-7 and 85.21% for the additional Lots 10-13. The total length of lines constructed under the project was 1,715km for MV and 2,419.28km for LV, and 87,100 connections were completed within the UMEME service territory. The works on the lines were on schedule but the planned connections under the different constructed lines had not commenced due to delays in procuring all the necessary connection materials (meters and cables).

The installation of the 7km marine cable from Bukakata to Bugala Island was delayed due late delivery of the cable and land acquisition for the two switching sites. The cable has since been delivered to the site and surveying of the cable route was completed. The detailed progress of each of the Lots under UREAP is given in Table 3.8.

<sup>9</sup> Jointly funded by GoU and African Development Bank (AfDB)

**Table 3.8: Progress of Lots 1-13 under UREAP**

Lot No.	Service Territory	Status	Remarks
Lot 1	Central Service Territory (Nakasongola, Kiryandongo and Environs)	Completed on 20th June 2022	Commissioning was completed and the line network was handed over to the operators.
Lot 2	Central Service Territory (Luweero and Environs)	Completed on 06th June 2022	Construction works, including commissioning and handover to respective Network Operators, completed. The pending component is the Last Mile Connection.
Lot 3	Central North, Eastern and North-Eastern Service Territories (Alebtong, Amuria, Soroti, Mbale, Manafwa, Serere, Ngora, Bukedea & Environs)	Completed on 06th November 2022	Construction works, including commissioning and handover to respective Network Operators-Completed. The pending component is the Last Mile Connection.
Lot 4	Eastern Service Territory (Kaliro & Environs)	Completed on 06th July 2022	Construction works completed. Commissioning and handover to respective Network Operators completed. The pending component is the Last Mile Connection.
Lot 5	Eastern Service Territory (Iganga, Luuka and Environs)	Completed on 12th November 2022	Construction works, including commissioning and handover to respective Network Operators, completed. The pending component is the Last Mile Connection.
Lot 6	Design and Installation of Medium Voltage networks (submarine cable) and last-mile consumer connections (Lot-6)	September 20, 2023	Commissioning of the MV and distribution network completed. Works on laying of the marine cable was ongoing and the survey of the line route had been completed.
Lot 7	North, North-West Service Territory (Gulu, Nwoya, Lira and Environs)	Completed on March 23, 2023	Construction works, including commissioning and handover to respective Network Operators, completed. The pending component is the Last Mile Connection.
Lot 9A	Supplies	Pending delivery	
Lot 9B	Supplies	Completed	Payment under process
Lot 9C	Supplies	Completed	Payment under process
Lot 10	Eastern Service Territories (Butaleja, Iganga, Kamuli, Luuka, Mayuge, Namayingo, Namutumba, Soroti and Tororo District)	August 08, 2023	Pre-commissioning and commissioning were ongoing.



Lot No.	Service Territory	Status	Remarks
Lot 11	Central Service and North Western Service Territories (Kassanda, Kyankwazi, Luwero, Mubende, Mukono, Nakaseke, Wakiso, Nakasongola, Masindi, and Kiryandongo Districts)	Completed on 28th December 2022	Construction works, including commissioning and handover to respective Network Operators, completed. The pending component is the Last Mile Connection.
Lot 12	Southern and Southwestern service Territories (Butambala, Isingiro, Kabale, Kanungu, Kyotera, Mbarara and Rukungiri Districts)	Completed on 08th December 2022	Construction works, including commissioning and handover to respective Network Operators, completed. The pending component is the Last Mile Connection.
Lot 13	Rwenzori and Western Service Territories (Kabarole, Kakumiro, Kamwenge, Kasese, Mitooma and Rubirizi Districts)	To be completed on August 22, 2023	MV and LV distribution line construction was completed. Transformer installation commenced.

Source: Field Findings



L-R: Completed grid extension works under ERT III in Leju Trading Centre in Terego District; New grid extension scheme in Nsamu TC, Mpigi under TBEA



Completed grid extension scheme in Kiwumu TC, Mukono District under ERT III



The overall performance of the Transmission and Distribution Sub-programme is summarized in Table 3.9.

**Table 3.9: Performance of the Transmission and Distribution Sub-programme by 30<sup>th</sup> June 2023**

Interventions	Outputs	Annual Budget (Ug shs)	% of Budget Received	% of Budget Spent	Annual Target	Cum. Achieved Quantity	Physical Score (%)	Remarks
Expand and Rehabilitate the Transmission Network	Distance in km of high voltage lines added to the transmission grid	430	90.4	100	2600	417.0	16.04	Karuma-Lira T-line and Entebbe-Mutundwe T-Lines were completed.
	Transformation capacity added to the grid (MVA)	184	90.4	100	250	160.0	64.00	
Expand and Rehabilitate the Distribution Network	No. of km of medium voltage lines added to the grid	406	94.5	43	10000	6129.0	61.29	Most Lots under UREAP are completed, and several lines under ERT III are in the final stages of implementation.
	No. of km of Low voltage lines added to the grid	174	94.5	233	10000	10690.0	100.00	
Reduce End User Tariffs	No. of Last-mile connections made	22	76.7	102	300000	16034	5.34	Implementation of the free connections policy was ongoing but delays were experienced due to connection materials that were on order.
							<b>49.3</b>	<b>Output performance</b>
<b>Outcome Indicator</b>				<b>Annual Target</b>	<b>Achieved</b>	<b>Score (%)</b>	<b>Remarks</b>	
% of the population with access to electricity				35	22	63		
<b>Outcome performance</b>						<b>63</b>		
<b>Overall Sub-programme performance</b>						<b>54.1</b>		

Source: Field Findings and MEMD Q4 Reports





### Sub-programme challenges

1. Increased vandalism on ongoing and existing electricity transmission and distribution infrastructure. The case of rampant vandalism on the Karuma Project Transmission Lines and other projects is well documented.
2. The low electricity connection and usage rates continue due to the high costs of connection coupled with the high tariffs.
3. High deemed energy costs faced by the sector due to delayed completion of power transmission infrastructure as a result of compensation and funding delays.

### Conclusion

The progress of implementation of interventions under the sub-programme by the end of FY 2022/23 was fair at 54.1%. Works continued on several transmission projects and the Karuma-Lira transmission line and the Entebbe-Mutundwe lines were energized. Progress was also registered on the electricity grid extensions in several parts of the country and the level of electricity access increased to 22%. However, the programme continued to grapple with delayed projects due to compensation, high deemed energy for un-evacuated power and vandalism to new and ongoing infrastructure.

### Recommendations

1. The Parliament and MEMD should enact regulations and policies respectively in consultation with other key stakeholders<sup>10</sup> to better regulate the trade in scrap metal to reduce the vandalism of critical energy infrastructure and the new laws need to be enforced.
2. The Government should continue to provide a subsidy to promote more consumers connecting to the grid, and where possible tariffs for domestic consumers should be made affordable.

### 3.4 Renewable Energy Development Sub-programme

The objective of the sub-programme is to increase the adoption and the use of clean energy with an intermediate outcome of increased consumption of alternative clean cooking energy. The planned interventions under the sub-programme in FY2022/23 was increased promotion use of new and renewable energy solutions.

The sub-programme performance was fair at 50%. The sub-programme was poorly funded with a total budget of Ug shs 0.68bn, of which Ug shs 0.449bn (66.0%) was released and Ug shs 0.454bn (101.1%) of the release was spent by the end of the financial year.

#### Performance of the Intervention

The performance of the intervention under the sub-programme was fair at 61.1%. Works on most of the 15 mini-grids in Southern Uganda were pending installation of the solar arrays due to pending approvals from the funder.

<sup>10</sup> Ministry of Trade, Steel factories, scrap buyers.



**Table 3.10: Performance of Interventions under the Renewable Energy Development Sub-programme by 30<sup>th</sup> June 2023**

Intervention	Performance Rating	Remarks
Promote the use of new and renewable energy solutions		Fair performance of 61.1%. The construction of the solar arrays.15 mini-grids pending 10 technicians were not trained due to lack of funds.
<b>Average output performance</b>		<b>Fair performance of 61.1%.</b>

*Source: Author's Compilation*

The planned outputs under the intervention are: Increased deployment of new renewable energy solutions; off-grids based on renewable energy solutions promoted; development of grid-connected renewable energy systems; electric transport solutions promoted; net metering framework developed and technical capacity in renewable energy solutions developed; increased uptake of improved cook stoves.

### **Increased deployment of new renewable energy solutions**

Three (3) sites for solar water pumping were identified and installation was done at Nakasongola Health Centre IV, Opiu Mixed Farm in Kumi, and Kalaki Mixed Farm in Pallisa District. Four (4) institutional solar systems were installed in Kasese at Buhuhira Health Centre, Maghoma P.S, Mbata P.S., and Kasanzi P.S. in collaboration with the International Solar Alliance (ISA). Three (3) additional institutional solar systems were installed in Masaka at Zzime P. S, Kabukunga Roman Catholic School in Luweero District, and Zzitwe P. S. in Buikwe in collaboration with GIZ PREEEP. Twelve mosquito killer systems were installed at Nakasongola Health Centre IV, Rukungiri Hospital, and two households.

### **Off-grids based on renewable energy solutions promoted**

The 15 planned mini-grids in Southern Uganda had not been completed due to the pending procurement of the solar arrays. The MEMD was still waiting for approval of a grant extension and a direct procurement request by GIZ to undertake procurement of the solar array. The construction of the distribution network for the mini-grids was complete.

### **Development of grid-connected renewable energy systems**

After the completion of the solar 4MW solar installation at Busitema University efforts are underway to interconnect to the grid and a technical meeting with key stakeholders on the grid connection of the solar project was held. The power purchase agreement for the 4MW solar project was signed with UETCL and a grid connection license was granted by the Electricity Regulatory Authority (ERA) in December 2022.

### **Electric transport solutions promoted**

One stakeholder engagement on e-mobility and exhibition of E-mobility solutions was held during the Energy Week and the Renewable Energy Conference and Expo held in November 2022.

### **Net metering framework developed**

The Ministry of Energy and Mineral Development Signed an MoU with the Ministry of Defence and Nexus Green on the piloting of a net metering systems at Amber House and Kololo Independence



Grounds. The preliminary data collection and analysis for the technical studies on piloting the net metering for 516kW solar systems at the two locations were ongoing.

### **Technical capacity in renewable energy solutions developed**

Four staff were funded under the sub-programme to pursue master's degree programs in renewable energy. However, the planned capacity building of 10 technicians had not been undertaken. This is because the procurement of the demonstration units had not been undertaken.

The Ministry of Energy held a consultative workshop on the structuring of a Solar Technology and Application Resource Centre (STAR-C) to be established in Uganda and also signed an MOU with the International Solar Alliance (ISA) for support to establish a Centre of Excellence in Renewable Energy Technology (CERET).

### **Increased uptake of improved cook stoves**

Over 400 household cook stoves were disseminated, but installation of institutional cook stoves had not progressed due to limited financing for procurement. The Ministry finalized the cooking energy needs assessment in both public and private institutions. The consultant was engaged to undertake the situational energy needs assessment in the institutions and the rollout strategy and plan had finalized the assignment. The submission of the final report and tender design documents to the Ministry was undertaken. The performance of the outputs under the Renewable Energy Development Sub-programme is summarized in Table 3.11.



**Table 3.11: Performance of the Renewable Energy Development Sub-programme for FY2022/23**

Interventions	Outputs	Annual Budget ( Ug shs)	% of budget received	% of budget spent	Annual Target	Physical Performance Score (%)	Remarks
Increased deployment of new and renewable energy solutions (solar water, heating, solar drying, solar cookers, wind, water pumping solutions and solar water pumping)	Increased deployment of new renewable energy solutions	0.10	66.0	101	100.00	50.0	The solar equipment grant from Hunan was received and the equipment was installed.
	Off-grids based on renewable energy solutions promoted.	0.10	66.0	101	15.00	0.0	Implementation of 15 mini-grids not completed.
	Development of grid-connected renewable energy systems	0.10	66.0	101	1.00	100.0	Approval for granted for 4MW Busitema Solar Plant.
	Electric transport solutions promoted	0.10	66.0	101	100.00	50.0	e-mobility conference held.
	Net metering framework developed	0.10	66.0	101	2.00	100.0	Piloting of net metering at Amber House and Kololo was being discussed.
	Technical capacity in renewable energy solutions developed	0.10	66.0	101	14.00	28.6	10 technicians were not trained due to lack of funds.
	Increased uptake of improved cook stoves	0.10	66.0	101	405.00	98.8	400 household cook stoves given out
	<b>Total</b>	<b>0.68</b>	<b>0.45</b>			<b>61.1</b>	<b>Output performance</b>
<b>Indicator</b>							
	<b>Unit</b>	<b>Target</b>		<b>Achieved</b>	<b>Indicator Performance (%)</b>		
Increased consumption of clean energy	%	40		35	87.5		
Number of solar water heaters installed	Number	5		0	0		
No. of new renewable energy solutions including - solar water heaters, solar water pumping solutions, solar irrigation solutions, solar driers installed	Number	10		3	30		
Number of households, and SMEs connected to off-grid solar for lighting	Number	5,000		2	0.04		
<b>Average Indicator Performance</b>					<b>29.4</b>		
<b>Overall Performance</b>					<b>50.0</b>		

Source: Field Findings and MEMD Q4 Reports



### Sub-programme challenges

The main hindrance to the sub-programme performance is the low budget allocation. The activities under the sub-programme have remained at a scale that will not have a significant impact due to the low level of funding.

### Conclusion

The sub-programme continues to struggle to deploy and promote renewable energy solutions on a large scale due to funding constraints. The ambitious planned installation of 15 solar-mini grids in Rakai and Isingiro stalled due to a delay in procuring the solar array. Also, the installation of the 5 planned institutional cook stoves was not undertaken due to a lack of funding. However, under the sub-programme, some renewable energy initiatives such as the connection of the 4MW Busitema solar plant to the grid made progress with the granting of the license by the regulator.

### Recommendation

The MEMD should allocate more funding in the MTEF for the implementation of the activities under the sub-programme such as increased use and deployment of renewable energy to reduce the reliance on biomass.

## 3.5 Energy Efficiency and Conservation Sub-programme

This sub-programme aims at promoting energy-efficient practices and technologies. The planned intervention under this sub-programme in FY2022/23 is the promotion of the use of energy-efficient equipment for both industrial and residential consumers. The planned outputs are: utilization of alternative and efficient cooking techniques; Promotion of Energy management among high energy consuming facilities; Awareness of sustainable energy and sustainable energy created; and complementary policies on energy efficiency developed.

### Performance of the Intervention

The sub-programme performance was poor at 42.5% (Table 3.12). Three draft standards for energy efficiency were completed and approved by the Cabinet. The Energy Efficiency and Electric Mobility Conference was held in November 2022 to raise awareness on energy efficiency. The sub-programme was poorly funded with a total budget of Ug shs 0.6bn, of which Ug shs 0.388bn was released and Ug shs 0.387bn spent by the end of the financial year.

**Table 3.12: Performance of Interventions under the Energy Efficiency and Conservation Sub-programme by 30<sup>th</sup> June 2023**

Intervention	Performance Rating	Remarks
Promotion of efficient equipment for both industrial and residential consumers		Poor performance of 42.5%. Two energy efficiency standards were drafted
<b>Average output performance</b>		<b>Poor performance of 42.5%</b>

*Source: Author's Compilation*



## **Utilization of alternative and efficient cooking techniques**

The MEMD received support from the UK-FCDO-funded Modern Energy Cooking Services (MECS) to develop an eCooking Strategy and Action Plan for Uganda. A consultant was hired to develop the strategy with the main objective of developing a baseline on the status of eCooking. The study will also determine the contribution that eCooking could contribute towards meeting the NDPIII target to increase access to clean cooking from 15% in 2020 to 50% by 2025. The consultant will also prepare a strategy and action plan to accelerate the penetration of eCooking in Uganda's cooking mix.

## **Promotion of Energy management among high energy-consuming facilities**

Business case models for investment in energy efficiency were formulated for 7<sup>11</sup> tea factories. The dissemination of energy audit results was done for Buhweju Tea Factory in Buhweju, Kayonza Growers Tea Factory in Kanungu, Igara Tea Factory in Kyamuhunga, Swazi Highland Tea Factory and Kyamuhunga Tea Factory in Bushenyi District, and Awelo Millers and Packers Investments Ltd in Lira District.

## **Awareness of electrical efficiency and sustainable energy created**

Energy and Mineral Week 2022 was conducted and as part of this, the Energy Efficiency and Electric Mobility Conference 2022 was held on 1<sup>st</sup> November 2022. In partnership with GIZ, the Clean Energy Fair was organized to showcase the various affordable renewable energy options to the people of West Nile and Northern Uganda and offer a platform for people at the grassroots to pick key lessons for the betterment of their lives. The energy campaign was held in Arua from 28<sup>th</sup> September – 1<sup>st</sup> October 2022 in the form of media campaigns focusing on the following key energy themes: i) Energy efficiency; ii) Biogas technologies; and iii) Solar energy technologies. Over thirty companies dealing in renewable energy and energy efficiency technologies exhibited at the Energy fair. Also, in partnership with SNV, the Energy Efficiency Expo at Buhinga Stadium, Fort portal City from March 22<sup>nd</sup> – 26<sup>th</sup> 2023 under the theme: “*Energy Efficiency, Endless Possibilities*”.

## **Complementary policies on Energy efficiency developed**

The MEMD is part of the UNBS Energy Management Technical Committee (TC). A total of 120 developed standards were developed for energy efficiency and saving products, systems and practices. The TC developed the following draft Uganda Standards (DUS): DUS ISO 17741:2016, General technical rules for measurement, calculation and verification of energy savings of projects; DUS ISO 50021:2019, Energy Management and Energy Savings — General Guidelines for selecting energy savings evaluators. These DUS are adoptions from ISO standards and were circulated to the public for comments on their suitability for implementation. The performance of the Energy Efficiency and Conservation Sub-programme is summarized in Table 3.13.

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11 Mcleod, Nyambya, Rwenzori, Kyamuhunga, Kayonza, and Igara.



**Table 3.13: Performance of the Energy Efficiency and Conservation Sub-programme by 30<sup>th</sup> June 2023**

Output	Annual Budget (Ug shs)	% of budget received	% of budget spent	Annual Target	Cum. Achieved Qty	Physical Performance (%)	Remarks
Utilization of alternative and efficient cooking techniques	0.18	0.054	0.0429	23.83	50.00	50.00	The consultant engaged to develop a strategy for e-cooking
Promotion of Energy management among high energy-consuming facilities	0.18	0.054	0.0429	23.83	50.00	50.00	Energy audit results disseminated
Awareness of sustainable energy and energy efficiency created	0.18	0.054	0.0429	23.83	60.00	60.00	Energy Week 2022 held
Complementary policies on Energy efficiency developed	0.06	0.018	0.0143	23.83	3.00	100.00	3 draft standards developed
	0.6	0.18	0.143			65.00	<b>Output performance</b>
Intermediate Outcome Performance							
<b>Indicator</b>				<b>Annual Target</b>	<b>Achieved</b>		<b>Indicator Performance (%)</b>
No. of electric charging transport stations established				2	0		0
Average Indicator Performance							0
<b>Overall Performance</b>							<b>42.2</b> <b>Poor performance</b>

*Source: Field Findings and MEMD Q4 Reports*

### Sub-programme challenges

1. Small and medium enterprises (SMEs) lack access to energy-efficient equipment due to the high initial acquisition costs.
2. The low budget MTEF allocations to the programme have been consistently too low for the activities to have any significant impact.



## Conclusion

Overall performance of the sub-programme was poor at 42.2%. Although there is a need to optimize the use of energy in both homes and industries to save on costs, the level of funding to the sub-programme currently is not adequate for the interventions to have a high impact on the level of energy efficiency. It is good that several standards for energy efficiency were developed and more are in the pipeline, but other policies need to be put into place so that energy consumers are supported to move to the most efficient technologies and scaling up of existing interventions needs to be done so that there is increased coverage.

## Recommendation

The MEMD should support industrial and domestic energy consumers to enable them to access the most efficient technologies to tie in with the planned energy efficient standards.





## CHAPTER 4: CONCLUSION AND RECOMMENDATIONS

### 4.1 Programme Conclusion

The overall performance of the Sustainable Energy Development Programme was poor at 49.7%. Although access to electricity remains one of the Government's priorities, the level of access remained at 22% and only a total of 12,728 of the planned free connections were made through several initiatives/projects. Some of the key achievements during the financial year were the completion of the Karuma-Lira transmission line, Lira substation, Entebbe-Mutundwe transmission project, and Lot 1 (Nakasongola and Kiryandongo), Lot 2 (Luwero and Nakaseke), Lot 3 (Alebtong, Amuria, Soroti, Mbale, Manafwa, Serere, Ngora, Bukedea), Lot 4 (Kaliro), Lot 5 (Iganga, Luuka) and Lot 7 (Gulu-Nwoya under the Uganda Rural Electricity Access Project (UREAP). This added a total of 6,129 km of medium voltage distribution (11kV and 33kV) and 10,690km of low voltage distribution lines to the electricity grid.

Completion of all the works in the programme's flagship projects at Karuma HPP experienced further delay, although the wet commissioning of the three units (1, 3, and 4) was completed, adding 300 MW to the generation capacity. Works to remedy the several defects at Karuma HPP and Isimba HPP were ongoing but there was a need to find long-term solutions to some of the ongoing contractual and technical disputes on these projects. Planned outputs under the Renewable Development, Energy Efficiency and Conservation Sub-programmes continued to be very poorly funded implying minimal impact.

Implementation challenges due to inefficiency in procurement, and difficulty in acquisition of RoW/wayleaves continued to hamper several projects. The programme also continues to grapple with the ever-present vice of vandalism on the network infrastructure, and the low level of affordability of electricity leading to under-utilization of the completed energy infrastructure.

### 4.2 Recommendations

1. The Parliament and Cabinet should review the provisions in the Constitution regarding the acquisition of land for public investments.
2. The Government should create a Special Fund for undertaking the free connections initiative with funds ring-fenced from being diverted to other projects as has been previously done.
3. The MEMD should work with law enforcing agencies to institute a special task force to coordinate all efforts aimed at curbing vandalism.



## REFERENCES

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## ANNEXES

### Annex 1: Interventions, Outputs and Implementing Agencies

Interventions	Outputs	Implementing Agency
Undertake preliminary development of large-generation plants	Construction of Nyagak III HPP	UEGCL, MEMD
	Construction of Muzizi HPP	
	Construction of Karuma HPP	
	Completion of defects liability Period for Isimba HPP	
Seek approvals for the construction of a nuclear power generation	Energy policy, plans, regulation and monitoring	MEMD
	Atomic energy promotion and coordination	MEMD
	Membership to IAEA	MEMD
Expand and Rehabilitate the Transmission Network	Distance in km of high voltage lines added to the transmission grid.	UETCL
	Capacity of transformer capacity(MVA) added to the grid	
Expand and Rehabilitate the Distribution Network	No. of km of medium voltage lines added to the grid	MEMD
	No. of km of low voltage lines added to the grid	MEMD
Reduce End User Tariffs	No. of Last-mile connections made	MEMD
Promote the use of new and renewable energy solutions	Increased deployment of new renewable Energy solutions	MEMD
	Off-grid mini-grids based on renewable energy promoted	
	Development of grid-connected renewable energy systems	
	Electric transport solutions promoted	
	Net metering framework developed	
	Technical capacity in renewable energy solutions developed	
Promote the use of energy-efficient equipment for both industrial and residential consumers	Utilization and adoption of efficient cooking techniques	MEMD
	Energy management among high energy consuming facilities integrated and energy efficiency /conservation potential established.	MEMD
	Awareness of energy efficiency and sustainable energy utilization created.	MEMD
	Complimentary policies on energy efficiency developed.	MEMD

*Source: Author's Compilation*

**Annex 2: Overall progress of Rural Electrification lined under ERT III as at 30<sup>th</sup> June 2023**

LINE DESCRIPTION	STATUS OF PROJECT ACTIVITIES
<b>Grid Extension Projects</b>	
<b>Fast Track Line 1</b> Construction of 33kV Lines and Associated Low Voltage Networks Under Lot 1: Kiganda-Mile 16 with tee off to Katabalanga and Kibyimirizi (110.77km)	<b>RAP Implementation</b> Compensation of Project Affected Persons including forests effected up to 99.72%.
	<b>Construction Works</b> The project was commissioned on 5 <sup>th</sup> Feb 2021. Defects Liability Period Closed on February 28, 2022.
<b>Fast Track line 2</b> Construction of 33kv lines and associated low voltage networks under Lot 2: Ruhumba - Kashwa with tee-offs to Rwebishuri (125km).	<b>RAP Implementation</b> Assessment and compensation of Project Affected Persons effected up to 96.67%.
	<b>Construction Works</b> The project was commissioned on 31 <sup>st</sup> Aug 2020. Defects Liability Period Closed on August 31, 2021.
<b>Fast Track line 3</b> Design, supply and installation of 33kV lines and associated low voltage networks for LOT 1: Fast Track Line 3 (Wandi – Yumbe – Moyo) (352km)	<b>RAP Implementation (Covers Lines 3 &amp; 4)</b> Compensation of Project Affected Persons including Forests effected up to 98.2%.
	<b>Construction Works - Line 3</b> <b>Original Scope</b> Construction works were in progress. 97% of MV poles and 98.3% of LV poles had been erected. 91.3% of MV Line and 90.13% of LV have been strung. Overall Completion attained was 83%. <b>Additional Scope</b> Construction works were in progress. 100% of MV poles and 100% of LV poles had been erected. 87% of MV Line and 100% of LV had been strung. Overall Completion attained was 83%. Works under this line were still on hold until the World Bank approved the compensation report for Lines 3 & 4. However, a change order for contract extension up to December 31, 2023, was submitted for approval and signature.
<b>Fast Track line 4</b> Design, supply and installation of 33kV lines and associated low voltage networks for Lot 2: Fast track line 4 (Onduparaka – Odramacaku – Abiria) – (46.8km)	<b>Construction Works - Line 4</b> Construction works were in progress. 100% of MV poles and 100% of LV poles had been erected. 100% of MV Line and 100% of LV has been strung. 100% Transformers installed. Overall Completion attained is 90%. Works under this line were still on hold until the World Bank approved the compensation report for Lines 3 & 4. However, a Change order for contract extension up to December 31, 2023, was submitted for approval and signature.



LINE DESCRIPTION	STATUS OF PROJECT ACTIVITIES
<p><b>Lot 1B</b></p> <p>Procurement of Design, Supply and Installation of 33kV Medium Voltages Power Lines and associated low voltage networks for Lot 1B: Line 11 – Kyabadaza – Masankwa, Nyanama, Mpenja – Maseruka, Kiriri – Kasasa, Mpenja – Nsambwe – Kanoni – Mamba – Mawuki (130km).</p>	<p><b>RAP Implementation</b></p> <p>Compensation of PAPs including forests affected up to 97.11%. The Compensation report was cleared by the World Bank on December 13, 2022.</p> <p><b>Construction Works</b></p> <p>The project was commissioned on May 31, 2023. The Defects Liability Period was ongoing until May 31, 2024.</p>
<p><b>Lot 2B</b></p> <p>Procurement of Design, Supply, and Installation of 33kV Medium Voltages Power Lines and associated low voltage networks for Lot 2B: Line 12 – Nakifuma – Nagojje, Walusubi – Katogo Mbaliga – Namele &amp; Nakasajja – Kyampisi (75.3km))</p>	<p><b>RAP Implementation</b></p> <p>Assessment and compensation of Project Affected Persons including restoration of forests affected up to 76.5%. However, an additional 698 PAPs were cleared by Audit for payment. These hadn't been paid due to the unavailability of enough funds in the escrow account.</p> <p><b>Construction Works</b></p> <p>Construction works were in progress. 1,096 (97%) nos. of MV Poles and 4,131 (99%) Nos of LV poles had been erected. 215.2km (98%) of MV Line has been strung. 196 km (94%) of LV Line strung. 13 out of 54 Transformers installed (24%). Overall Completion attained was 79.8%.</p> <p>Works under this line were still on hold until we compensate the remaining PAPs and the World Bank approves the compensation report. However, a Change order for contract extension up to December 31, 2023, was submitted for approval and signature.</p>
<p><b>Lot 3B</b></p> <p>Procurement of Design, Supply and Installation of 33kV Medium Voltages Power Lines and associated low voltage networks for Lot 3B: Line 13 – Mitemula – Nakiyaga – Nkuke – Kyanamukaka with Tee-offs Nkuke – Ketengesa, Bukeeri – Namirembe &amp; Baale Landing Sites, Kyanamukaka – Butano (104km).</p>	<p><b>RAP Implementation</b></p> <p>Assessment and compensation of Project Affected Persons including restoration of forests affected up to 91.42%. The Compensation report was cleared by the World Bank on June 15, 2023.</p> <p><b>Construction Works</b></p> <p>Construction works were in progress. 1,756 (99%) nos. of MV Poles erected and 4,792 (100%) nos. for LV. Line stringing is in the process;</p> <p>115.8 km (99%) of MV Line and 244.9 km (99%) of LV line had been strung. All materials had been delivered. Transformer installation is at 31%. Completion attained is 82%. Works were ongoing and the contractual completion date was December 31, 2023.</p>



LINE DESCRIPTION	STATUS OF PROJECT ACTIVITIES
<p><b>Lot 1C</b></p> <p>Procurement of Design, Supply and Installation of 33kV Medium Voltages Power Lines and associated low voltage networks for LOT 1C: Line 14: Mubende - Kyabayanga - Ngangi with tee-off Kahirimbara, Kibaale – Kikwaya and Karuguza SS, Kibonge, Buronzi, Katete, Nyamarunda, Kitoro and Kabale Pri Sch (130.7 km)</p>	<p><b>RAP Implementation</b></p> <p>Compensation of Project Affected Persons including forests affected up to 70.62%. However, an additional 365 PAPs were cleared by Audit for payment. These hadn't been paid due to the unavailability of enough funds in the escrow account.</p> <p><b>Construction Work</b></p> <p>Construction works were in progress. 1,784 (87%) nos. of MV Poles erected and 2,585 (74.6%) nos. of LV poles erected. 108.3 km (86.2%) of MV Line and 124.32 km (92.3%) of LV Line have been strung Completion attained is 71.7%</p> <p>Works under this line were still on hold until we compensate the remaining PAPs and the World Bank approves the compensation report. However, a Change order for contract extension up to December 31, 2023, was submitted for approval and signature.</p>
<p><b>Lot 2C</b></p> <p>“Procurement of Design, Supply and Installation of 33kV Medium Voltages Power Lines and associated low voltage networks for Lot 2C: Line 15: Kiyagara-Bwizi - Biguri – Ntonwa – Kyakaitaba - Bwensamba (95.8 km)</p>	<p><b>RAP Implementation</b></p> <p>Compensation of Project Affected Persons was at 92.27%.</p> <p>However, an additional 54 PAPs were cleared by Audit for payment. These hadn't been paid due to the unavailability of enough funds in the escrow account.</p> <p><b>Construction Works</b></p> <p>Construction works were in progress. 1,304 (100%) nos. of MV poles erected and 2,497 (100%) nos. of LV Poles erected. 90.9km of MV Line (99%) and 129.17 km of LV Line (94.2%) had been strung. Completion attained was 84.36%</p> <p>Works under this line were still on hold until compensation of the remaining PAPs and the World Bank approves the compensation report. However, a Change order for contract extension up to December 31, 2023, was submitted for approval and signature.</p>
<p><b>Lot 1D</b></p> <p>“Procurement of Design, Supply and Installation of 33kV Medium Voltages Power Lines and associated low voltage networks for Lot 1D: line 16 - Rukoni (mailo 36) - Rwoho - Ngugo – Bugamba (29.8km)- &amp; Line 17 - Bugangari - Rwenshama with Tee-Off to Mirama Sub County (81.5km)</p>	<p><b>RAP Implementation</b></p> <p>Compensation of Project Affected Persons at 97.97% (for Line 16) and 89.74% (for Line 17). However, an additional 10 PAPs were cleared by Audit for payment under line 17. These hadn't been paid due to the unavailability of enough funds in the escrow account.</p> <p><b>Construction Works</b></p> <p><b>Line 16 Status:</b> Construction works were in progress. 208 (99.5%) nos. of MV poles erected and 364 (96.5%) nos. of LV Poles erected on Line 16. 15 km of MV Line (95.5%) and 22.2 km of LV line (93.5%) had been strung. Overall Completion attained for Line 16 is 78.3%.</p> <p><b>Line 17 Status:</b> 1,259 (100%) nos. of MV poles and 2,491 (96.6%) of LV poles had been erected on Line 17. Conductor stringing is in the process; 73.48 km (83.3%) of the MV line and 131.6km (84.7%) of the LV line are completed. 77.5% completion has been attained on Line 17.</p> <p>Works were ongoing and the contractual completion date was December 31, 2023.</p>



LINE DESCRIPTION	STATUS OF PROJECT ACTIVITIES
<p><b>Lot 2D</b></p> <p>“Procurement of Design, Supply and Installation of 33kV Medium Voltages Power Lines and associated low voltage networks for Lot 2D: line 18 - Rwebisengo - Ntoroko (58.402km) - &amp; line 19 - Kagongo - Rweshuri with Tee-Off Kigalama &amp; Nyansimbo – Rwenkoobwa (66.29km)</p>	<p><b>RAP Implementation</b></p> <p>Compensation of Project Affected Persons at 93.58% (for Line 18) and 95.91% (for Line 19). However, an additional 41 PAPs were cleared by Audit for payment under line 18. These hadn't been paid due to the unavailability of enough funds in the escrow account.</p> <p><b>Construction Works</b></p> <p><b>Line 18:</b> Construction works were in progress, 593 (100%) MV poles had been erected and 1,474 (100%) LV poles were erected. 37.2 km (100%) of MV Line and 75.34 km (100%) of LV Line have been strung and 100% TXs were installed. Works had been commissioned.</p> <p><b>Line 19:</b> Construction works on line 19 were progressing well. So far 1,047 (100%) nos. of MV poles have been erected and 2,279 (100%) nos. of LV Poles. 68.1 km (100%) of MV line and 118.5 km (100%) of LV line were strung and 44 nos. (100%) of TXs were installed. Pre-commissioning has been completed. Works were ongoing and the contractual completion date was December 31, 2023.</p>
<p><b>Lot 1E</b></p> <p>Procurement of Design, Supply and Installation of 33kV Medium Voltages Power Lines and associated low voltage networks for Lot 1E Line 20: Ngeta – Ayala – Alito- Ogur -Aloi – Adwari–Patongo (102.4km)</p>	<p><b>RAP Implementation</b></p> <p>Compensation for Project Affected Persons and affected forests is at 89.70%.</p> <p><b>Construction Works</b></p> <p>Construction works were in progress. 560 (40.8%) nos. of MV poles erected and 1,340 (75.1%) nos. of LV poles had been erected. 46.3km (48.5%) of MV stringing and 39.9 km (37.6%) of LV Line were strung. Completion attained is 54.4%.</p> <p>Works under this line were still on hold until we compensate the remaining PAPs and the World Bank approves the compensation report. However, a Change order for contract extension up to December 31, 2023, was submitted for approval and signature.</p>
<p><b>Lot 2E</b> Procurement of Design, Supply, and Installation of 33kV Medium Voltages Power Lines and associated low voltage networks for Lot 2E Line 21: Dokolo - Agwata HCIII, Aceng - Dokolo - Atru, Dokolo - Apapai - Tiriri &amp; Otuboi - Orungo - Acuna (95.5km).</p>	<p><b>RAP Implementation</b></p> <p>Compensation for Project Affected Persons and affected forests was at 92.38%.</p> <p><b>Construction Works</b></p> <p>Construction works were in progress. 1,280 (98.6%) nos. of MV Poles erected and 2,356 (97.6%) Nos of LV poles erected. 86.83 km (98.2%) of MV Line and 113.5 km (94.4%) of LV Line was strung Completion attained is 82.8%.</p> <p>Works under this line were still on hold until we compensate the remaining PAPs and the World Bank approves the compensation report. However, a Change order for contract extension up to December 31, 2023, was submitted for approval and signature.</p>



LINE DESCRIPTION	STATUS OF PROJECT ACTIVITIES
<b>Umeme Batch 1</b> Procurement of Design, Supply and Installation of 33kV and 11kV Lines and Associated Low Voltage Networks for Grid Intensification Under ERT III (29 Schemes) For Batch-1 under UMEME Service Territory	<b>RAP Implementation</b> Compensation of Project Affected Persons was at 88.75%.
	<b>Construction Works</b> Construction works were in progress. 1,756 (99%) nos. of MV Poles erected and 4,792 (100%) nos. for LV. Line stringing was in process; 115.8 km (99%) of MV Line and 244.9km (99%) of LV line had been strung. All materials had been delivered except for transformers Completion attained is 95%. Pre-commissioning concluded in August 2022. Works were ongoing and the contractual completion date is December 31, 2023.
<b>Umeme Batch 2</b> Design, Supply, and Installation of 11kv /33kv Lines and Associated Low Voltage Networks for grid intensification under ERT III (34 schemes) for Batch 2 Umeme Service Territory	<b>RAP Implementation</b> Compensation of Project Affected Persons was at 93.96%.
	<b>Construction Works</b> Construction works were in progress. 100% of LV poles and 100% of MV poles had been erected. Conductor stringing is in progress and (100%) of the MV Line and (100%) of the LV line were strung. All 60 transformers installed and pre-commissioned Completion attained is 90%. Works under this line were still on hold until we compensate the remaining PAPs and the World Bank approves the compensation report. However, a Change order for contract extension up to December 31, 2023, was submitted for approval and signature.
<b>3SPs lot 1</b> Design, Supply, and Installation of 33kV lines and Associated Low Voltage Networks for grid intensification under ERT III (52 schemes) for three lots; Lot 1: Central Service Territory	<b>RAP Implementation (for Lots 1, 2 and 3)</b> The compensation of PAPs was at 98.75%.
	<b>Construction Works</b> Project Commissioned on 21 <sup>st</sup> May 2021.
<b>3SPs Lot 2</b> Design, Supply, and Installation of 33kV lines and Associated Low Voltage Networks for grid intensification under ERT III (52 schemes) for three lots; Lot 2: Rwenzori Service Territory	<b>RAP Implementation</b> Compensation of Project Affected Persons was at 89.86%.
	<b>Construction Works</b> Construction works were in progress and 95% of MV Poles and 97% of LV poles had been erected. Conductor stringing is in progress, 89% of the MV Line and 98% of the LV line were strung. 16 TXs (80%) had been installed. Completion attained is 80.15%. Works under this line were still on hold until we compensate the remaining PAPs and the World Bank approves the compensation report. However, a Change order for contract extension up to December 31, 2023, was submitted for approval and signature.







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