

MINISTRY OF ENERGY AND MINERAL DEVELOPMENT
SECTOR PERFORMANCE REPORT
2020

***“Utilising Energy and Mineral Resources for Economic
Recovery: Post Pandemic”***

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FOREWORD

This Energy and Mineral Development Sector Annual Performance Report provides a comprehensive assessment of the Sector's performance during the Financial Year 2019/20. The Report focuses on the performance of the Ministry of Energy and Mineral Development, together with that of the Sector Institutions against output targets and progress made in the implementation of key actions agreed during the last joint sector review retreat.

Like everywhere else in the world, the sector activities have been affected very negatively by COVID-19 since February 2020. Key among these negative impacts, have been; slowed project implementation, reduced electricity demand and low revenue collection, reduced rate of new connections, increased operational costs and reduced demand for petroleum products.

The above impacts notwithstanding, the sector still registered progress and this Report assesses progress against the commitments made in the National Development Plan (NDP) II and the Presidential directives of 2016. In addition, the Report tracks progress made against actions and commitments outlined in the NRM Manifesto 2016-2021 and implementation of the actions agreed in the previous retreat.

The theme for this year's JSR is ***“Utilising Energy and Mineral Resources for Economic Recovery: Post Pandemic”***. This theme underlines the important role the energy and minerals sector has to play in driving economic recovery past the impact of the pandemic.

The aim of the report is to provide a basis for accountability of the use of government resources and the results achieved; to provide a basis for policy discussions and to guide decisions on resource allocations in the next Financial Year 2020/21.

For my Ministry to effectively perform its mandate, the input and support of the various stakeholders is important. In this regard, I recognize the contribution of the Government of Uganda, Development Partners, the Private Sector, Institutions and Agencies affiliated to the Ministry and all stakeholders for the support rendered towards the fulfilment of my Ministry's mandate.

I wish also to thank my colleagues the Ministers of State, the Permanent Secretary, the Directors, Heads of Departments, and all Members of Staff who work tirelessly to overcome the challenges and achieve key sector outputs.

It is my pleasure to invite stakeholders to read this report and contribute ideas for improving sector performance. Please do not hesitate to give your comments, suggestions, or raise issues for clarification.



Kitutu Kimono Mary Goretti (PhD)/MP

MINISTER OF ENERGY AND MINERAL DEVELOPMENT

ACRONYMS

3Ts and G	Tin, Tungsten, Tantalum and Gold	ERA	Electricity Regulatory Authority
ACP-EU	African, Caribbean and Pacific- European Union	ESIA	Environmental and Social Impact Assessment
AGCE	African Geothermal Centre of Excellence	FEED	Front-End Engineering Design
ARGeo	African Rift Geothermal Development Facility	GDC	Geothermal Development Company
ASM	Artisanal and Small-Scale Mining	GIS	Geographic Information System
BCF	Billion Cubic Feet	GoU	Government of Uganda
BPD	barrels of oil per day	GRD	Geothermal Resources Department
CA	Concession Agreement	HGA	Host Government Agreement
CPF	Central Processing Facility	ICGRL/RCM	International Conference of the Great Lakes Region / Regional Certification Mechanism
CRM	Certified Reference Materials	IGA	Inter-Governmental Agreement
CSO	Civil Society Organisation	IOC	International Oil Company
DGSM	Directorate of Geological Survey and Mines	ISO/IEC	International Organization for Standardization / International Electrotechnical Commission
DSM	Digital Surface Model	KML	Kilembe Mines Limited
EA	Exploration Area	MCRS	Mining Cadastre Registry System
EAC	East African Community	MEMD	Ministry of Energy and Mineral Development
EACOP	East Africa Crude Oil Pipeline		
EAGER	East African Geothermal Energy Facility		
EBS	Environmental Baseline		
EDC	External Drilling Consultant		

ML	Mining Lease	REE	Rare Earth Elements
MoFPED	Ministry of Finance, Planning and Economic Development	SDG	Sustainable Development Goals
MoWT Transport	Ministry of Works and Transport	SDP	Sector Development Programme
MPD	Midstream Petroleum Department	SHA	Shareholder Agreement
MT	Magnetotelluric	TDEM	Time Domain Electromagnetics
NDP	National Development Plan	TGW	Temperature Gradient Wells
NEMA	National Environment Management Authority	TIR	Thermal infra-red
NITA-U	National Information Technology Authority- Uganda	ToT	Training of Trainers
NOGP	National Oil and Gas Policy	TUL	Tullow Uganda Limited
NORAD	Norwegian Agency for International Development	UAS	Unmanned Aircraft System
NSI	National Standards Indicator	UBOS	Uganda Bureau of Statistics
PAPs	Project Affected Persons	UEDCL	Uganda Electricity Distribution Company Limited
PAU	Petroleum Authority of Uganda	UEGCL	Uganda Electricity Generation Company Limited
PDAC	Prospectors & Developers Association of Canada	UETCL	Uganda Electricity Transmission Company Limited
PEDPD	Petroleum Exploration Development and Production Department	UNOC	Uganda National Oil Company
PMPU	Police Mineral Protection Unit	UNU-GTP	United Nations University Geothermal Training Programme.
PSA	Production Sharing Agreement	URA	Uganda Revenue Authority
REA	Rural Electrification Agency	XRF	X-Ray Fluorescence

EXECUTIVE SUMMARY

The Energy and Mineral Development Sector has made significant progress towards the achievement of the National Development Objectives as spelt out in the National Development Plan and in the NRM Manifesto 2016 – 2021, although several delays have been registered due to the COVID-19 global pandemic that has greatly restricted operations and implementation of projects within the sector.

In the Power Subsector, a number of electricity generation projects spearheaded by both the public and the private sector have been completed and commissioned while others are under implementation. Government is expanding the Power Transmission and Distribution Infrastructure through the construction of the transmission lines and the substation projects. The potential of generating power from solar, wind and geothermal energy resources is also being promoted to diversify the energy mix and increase the proportion of renewables.

In the oil and gas subsector, the process of commercialization of oil and gas resources is being undertaken with the issuance of production licenses and the rollout of the second licensing round which closes on 30th September 2020. The lead refinery investor was identified and the Front-End Engineering Designs are ongoing in Milan, Italy. Discussions on the Host Government Agreement between Government and EACOP are nearing finalization.

In the mineral subsector, the investment promotion program has attained steady progress with an increase in various ore reserves. The construction for the development of Sukulu polymetallic phosphate deposit is nearing completion.

Over the medium term, the sector will continue to implement the following priority areas:

- i. Increase electricity generation capacity and expansion of the transmission and distribution networks;
- ii. Increase access to modern energy services through rural electrification and renewable energy development;
- iii. Promote and monitor petroleum exploration and development in order to increase the reserve base;
- iv. Develop petroleum refining, pipeline transportation, and bulk storage infrastructure.
- v. Streamline petroleum supply and distribution;
- vi. Promote and regulate mineral exploration, development, production and value addition; and;
- vii. Inspect and regulate exploration and mining operations.

Other priorities include: -

- i. Promotion of efficient utilization of energy; and
- ii. Monitoring geo-tectonic disturbances and radioactive emissions.

SECTOR GOVERNANCE

Policy Formulation and Review

In an effort to improve efficiency in service delivery, the Ministry undertook to review and also put in place new policies and legislation. For the period under review, the following was accomplished:

- **Energy Efficiency and Conservation Bill:** The Final Draft Bill was submitted to Cabinet Secretariat for approval.
- **Geothermal Policy of Uganda:** A Regulatory Impact Assessment (RIA) was completed and the Final Draft Policy is ready for submission to Cabinet Secretariat for approval.
- **The Petroleum (Refining, Conversion, Transmission and Midstream Storage) (Amendment) Regulations, 2020** was gazetted pursuant to the consent judgement entered between government and Total Midstream B.V to facilitate the execution of EACOP early project activities.

Financial Performance:

Overall, the Government of Uganda budget allocation to the Sector across the four votes is summarized in the table below.

Vote	Approved Budget (Bn UGX)	Budget Released (Bn UGX)	Budget Spent (Bn UGX)	% Budget Spent
MEMD - 017	1,865.250	1,235.301	979.012	79.3%
REA – 123	1,060.842	658.291	443.809	67.4%
UNOC – 311	31.470	29.403	29.403	100%
PAU – 312	50.199	43.616	42.687	97.9%

It is evident that Votes 017 and 123 are still facing challenges with absorption.

PROGRESS IN INCREASING AND EXPANSION OF POWER GENERATION, TRANSMISSION AND DISTRIBUTION INFRASTRUCTURE.

ELECTRICITY GENERATION CAPACITY

Government is also making significant progress towards achieving the NDP II targets. During the reporting period under review, **GET FIT Uganda** programme made further progress with the commissioning of four additional small hydropower projects, namely Sindila, Siti 2, Kyambura and Ndugutu. This added over 35 MW in installed capacity and an estimated annual generation of 162 GWh to the Ugandan National Grid. In total, 14 of the 17 projects in the portfolio were operational at the end of 2019, representing 122 MW (77 %) of the targeted 158 MW of installed capacity. The remaining three projects are expected to be commissioned by the end of FY2020/21.

Karuma HPP (600MW) Overall project progress now stands at 97.8%. First unit expected to be commissioned in November 2020 with the last unit expected in March 2021.

Total Domestic Energy Generation was 4,362.99GWh in 2019 up from 4,037.46GWh in 2018.

ENERGY CONSUMPTION

Unconstrained Domestic Energy Consumption was 4,080.81GWh in 2019 compared to 3,846.32GWh in 2018. Energy not supplied due to unscheduled Load shedding as at end of 2019 was 1.402GWh.

ELECTRICITY TRANSMISSION PROJECTS

The transmission network has grown by 13% to the current footprint of 2,989Kms as at end of Q1 2020. The increment is from commissioning of the Kawanda-Kapeeka 132kV 52km T-line and energizing of the Opuyo – Lira section of the Tororo – Lira T-line. This is a representation of 1,008Km of 220kV rating and 1,946Km of 132kV rating.

The following transmission lines are at various stages of implementation: Tororo-Opuyo-Lira 132kV 91% complete; Bujagali-Tororo-Lessos 220kV 77% complete; Karuma –Kawanda 400kV – 95% complete; Karuma-Lira 132kV – 70% complete; Karuma – Olwiyo 132kV - 93% complete; Bujagali 220kV bays - 42% complete; Electrification of Industrial Parks (Namanve South-98%, Luzira-98%, Iganga -100% and Mukono-100%, Namanve South-Luzira - 10%, Namanve North-Namanve South – 78%, Mukono T-off - 100%, Iganga T-off - 100%); Mutundwe – Entebbe 132kV – 46%; Opuyo substations upgrade – 93%; Opuyo – Moroto 132kV – 74.7%.

RURAL ELECTRIFICATION

Following the launch of the new Electricity Connections Policy in August 2018, it is anticipated that access rates will grow by 5% annually, that translates into an access target of 33% by the end of FY 2019/20. In absolute numbers, under the Electricity Connections Policy, 152,482 households received access to electricity in the FY 2019/20. In the reporting period, the national distribution network expanded as 2,550Km of Medium Voltage lines and 2,596Km of Low Voltage Lines were completed.

A total of about 1,392km of MV power lines and 1,482km of LV power lines under AfDB financing are under implementation and are expected to be commissioned in FY 2020/21. In addition, 2,500km of MV lines have been surveyed in preparation for appraisal and future development.

Government is currently fast-tracking rural electrification through electrification of all 570 Sub-counties to accelerate access and contribute to demand growth.

NUCLEAR POWER DEVELOPMENT

Government continued the promotion and development of nuclear energy for peaceful uses in electricity generation, cancer management, food safety assessment, tsetse fly control, improving agricultural productivity, water resources management and industries. To this effect, the Nuclear Energy Policy was integrated into the revised Energy Policy for Uganda.

As part of the process towards development of a Nuclear Energy Act, a Regulatory Impact Assessment (RIA) for nuclear energy in Uganda was initiated in 2019 and it is expected to be complete before end of 2020 paving way for stakeholder consultations on the principles of the proposed Bill.

Due to the lack of a clear Government policy on management and disposal of radioactive waste, a National Radioactive Waste Management Strategy was developed. This will provide critical guidance in the domestic management and disposal of radioactive waste.

BIOMASS RESOURCE MANAGEMENT

Sustainable Charcoal Production: The huge environmental impact of charcoal production coupled with the low conversion recoveries of 10% during production has necessitated the Ministry to embark on sustainable charcoal production through management of both supply side and replenishment of biomass feed stock for charcoal production on 1,000 hectares of land and through use of improved Casamance kilns.

Biofuels Regulations Development: The Ministry developed Draft Biofuel General Regulations (2020) to enable blending of biofuels (ethanol and biodiesel) with petroleum products (petrol and diesel) respectively by up to 5%. The Biofuel regulations give effect to the Biofuels Act, 2018 and specify the required feedstock to be used for production of biofuels as well as the licensing procedure among others. Sugar cane, sweet sorghum and cassava are used for bioethanol while jatropha, palm oil, castor and candle nut are used for bio diesel.

Restoration of Livelihoods in the Northern Region (PRELNOR) PROJECT

The Ministry is providing technical backstopping to the Ministry of Local Government in the implementation of the Project for the Restoration of Livelihoods in the Northern Region (PRELNOR). PRELNOR is an Agriculture Investment Project being financed by the International Fund for Agricultural Development (IFAD), and a grant from the Adaptation for Smallholder Agriculture Programme (ASAP) and the Government of Uganda. The project is being implemented in nine districts of northern Uganda (Agago, Adjumani, Amuru, Gulu, Lamwo, Nwoya, Omoro, Kitgum, and Pader).

PETROLEUM EXPLORATION, DEVELOPMENT AND PRODUCTION (OIL AND GAS)

During the period under review, significant progress was registered on the oil and gas sector in Uganda.

EXPLORATION LICENSES

The Ministry launched the second round of licensing which was promoted through three road shows in Houston, London and Dubai. Due to the COVID 19 pandemic, the deadline for submission was moved to 30th September 2020.

PRODUCTION LICENSES

The farm down of Tullow (U) Ltd operations in Uganda to Total E&P was concluded. The implication of this is that Total E&P assumes the production licenses previously held by Tullow (U) Ltd.

Uganda's Albertine Graben is now a mature Oil and Gas province that has nine (9) Production Licenses issued to Total E&P Uganda and CNOOC (U) Ltd.

The Applications for Production Licenses over the Lyeo field in Exploration Area 1A, Mpyo and Jobi-East fields in Exploration Area 1 all operated by TOTAL are still under review by Government. Due to their close proximity to the Tilenga Development Project, they are being considered to be added to the Tilenga project.

LAND ACQUISITION FOR UPSTREAM PROJECTS

Continued supervision of Resettlement Action Plan (RAP) for TILENGA project that stands at the following stage:

- RAP 1 (industrial area and access roads) which is 99% complete;
- RAP 2 & 4 (3 Ngiri well pads, 3 Kasamene -Wahrindi well pads, 1 Water Abstraction Unit, Flow lines, Access roads) that is 80% complete; and
- RAP 3, 3B & 5 (2 Ngiri well pads, 4 Gunya well pads, Flow lines, Access roads) that is 80% complete.

LEAD INVESTOR FOR REFINERY DEVELOPMENT

Government signed the Project Framework Agreement (PFA) with the Albert Graben Refinery Consortium (AGRC) as the potential investor who will design, build, finance and operate the refinery on 10th April 2018. The Consortium consists of Yaatra Africa LLC, Lion Works Group, Nuovo Pignone International SRL (a GE company), and Saipem SPA.

As one of the conditions to effectiveness of the PFA the AGRC posted a Performance Bond of 17 Million USD on 17th August 2018 that will be stepped down to 2 Million USD after the Front-End Engineering Design (FEED). The Consortium embarked on the FEED studies, and the Environment Social Impact Assessment for the next two years prior to taking Final Investment Decision (FID).

The Front-End Engineering Design (FEED) commenced in March 2019 and is ongoing at about 75% complete. The ESIA commenced in March 2020 and is currently ongoing. The Investor requested for review of the implementation timelines in the PFA to enable completion of the FEED and ESIA, among others. Consequently, government and the investor successfully negotiated during March 2020 and agreed to extend the PFA by 17

months. This extension was approved by Cabinet. The amended PFA was consented by the investors and the GOU and is being implemented as per the amendment.

DEVELOPMENT OF THE OIL AND GAS INDUSTRIAL PARK

The Master plan for the Industrial park was approved by the National Physical Planning Board (NPPB) on 25th June 2018. The plan takes into consideration the expected industries to be established in future, shared utilities and common services, management and financing structure of the park. The Uganda National Oil Company (UNOC) has embarked on the promotion to interested potential developers of the Industrial Park.

EAST AFRICAN CRUDE OIL PIPELINE (EACOP) PROJECT

Environment Social Impact Assessment (ESIA): The Environment and Social Impact Assessment for EACOP was completed and submitted to NEMA for approval. The Ministry together with its agencies, NEMA and Total organized ten (10) consultation meeting, one in each of the affected districts and three (3) public hearings in Kakumiro, Mubende and Rakai Districts. The Ministry continues to participate and support this process until the final approvals.

Front End Engineering Design (FEED): The Front-End Engineering Design (FEED) study was submitted by TOTAL E & P to Government of Uganda for approval. The ministry participated in the review of the FEED submission together with its agencies of Petroleum Authority of Uganda (PAU) and Uganda National Oil Company (UNOC).

Negotiation of the Host Government Agreement: Following the progress made in the negotiations of the Tullow farm out transaction, negotiations for the Host Government Agreement (HGA) resumed in June 2020.

There have been five (5) rounds of virtual online negotiation meetings held between the representatives of Government institutions and the International Oil Companies (IOCs) and significant progress has been made. The Ministry has also continued to participate and support internal preparations for negotiation of the Shareholding Agreements (SHA) and Tariff and Transportation Agreements (TTA).

MULTI- PRODUCTS PIPELINE

A 213 km long 10inch diameter pipeline is planned to be developed as part of the Refinery project to transport refined products from Hoima Refinery to a terminal west of Kampala City in Namwabula village, Mpigi district.

The Ministry engaged a Consultant, Strategic Friends International (SFI), to develop and implement a Resettlement Action Plan (RAP) for the acquisition of land for a corridor to accommodate the pipeline that will be traversing the districts of Mpigi, Wakiso, Mityana, Kiboga, Kyankwanzi, and Hoima. The consultant with the participation of the Ministry concluded the cadastral land survey and commenced asset valuation of the affected properties.

The Consultant submitted the draft valuation reports for the seven (7) districts of Hoima, Kikuube, Kyankwanzi, Kiboga, Mityana, Mpigi and Wakiso that were reviewed by the Ministry and submitted to the Chief Government Valuer (CGV) in the Ministry of Lands, Housing and Urban Development (MLHUD) for advice and approval.

LICENSING OIL MARKETING COMPANIES (OMC)

During the reporting period, the Department continued to streamline the licensing regime under the Petroleum Supply Act 2003 and General Regulations of 2009. In the same period, a total of one hundred twenty (120) companies were issued with Petroleum Operating Licenses and one hundred forty-nine (149) Petroleum Construction Permits were issued. Eighty (80) Construction Completion Certificates issued to developers of petroleum facilities in the country. In addition to the above two hundred nine (209) Environmental Impact Statement (EIS) reports were reviewed and recommendations sent to NEMA.

TRANSPORT AND STORAGE

The transportation of refined petroleum products on Lake Victoria is being fast tracked by both governments of Uganda and Kenya. This will lead to use of cheaper, reliable and safer mode of fuel transportation of imports. Mahathi infra, a private developer is putting up a jetty, storage tanks and vessels at Bukasa- Bugiri port on Lake Victoria shore line and is at 62% completion. The tank foundation, welding shop and staff quarters are complete. Parts for ship materials pre-fabricated are already on-site pending joining.

MINERAL EXPLORATION, DEVELOPMENT, PRODUCTION AND VALUE ADDITION

Geological Surveys: The country's geochemical coverage still remains at 35% while airborne geophysical surveys are at 80%. For the period under review; Government undertook the following: Preliminary geological exploration and geochemical surveys were carried out in Kyambogo uranium anomaly, Sembabule District; gold and base metals, in Zeu Zombo District; and iron ore in Kabale anomaly and surrounding areas. Radiometric surveys were carried out in Katara uranium anomaly, Buhweju District. Re-interpreted airborne radiometric data was done and new uranium targets were generated. Preliminary geological and geophysical (Resistivity) exploration of Kirwa wolfram prospect, Kisoro District.

Formulation and Regulation of Artisanal and Small-Scale Mining (ASM): The Ministry contracted the African Centre for Energy and Mineral Policy (ACEMP) to assist in the biometric registration of all ASMs in the country. The prototype software for the biometric registration has been developed and awaits integration with NIRA's database.

In addition to the 30% area allocated to ASMs from AUC' licenses, another 1 square kilometre has been allocated to MUMA in their previous working area in Kamusenene. An area is being identified in Buhweju for local ASMs in the district.

Over 726 ASMs across the country were sensitized and trained as trainers of trainers on the Biometric Registration of Artisanal and small-scale Miners (BRASM). These included 78 miners from Amudat, 80 from Busia, 103 from Bushenyi, 105 from Gulu, 75 from Kaabong,

85 from Ntungamo, and 110 from Wakiso District. Registration commencement has been delayed by the COVID-19 pandemic.

Mining Cadastre and Registry System (MCRS): Online e-government mining cadastre system launched on 1/10/2019 to facilitate licensing process; the Mining Cadastre and Registry System (MCRS) was up-graded to include online application, payment and submission of statutory documents/returns.

Airborne Geophysical Survey of Karamoja: Re packaged the project and attracted external financing for Airborne Geophysical Surveys and Geological Mapping of Karamoja. The Government of Spain expressed willingness to finance the aerial surveys and financing agreements were executed on 8th April 2020. Final clearance for air crafts has been granted and the project to be officially launched before end 2020.

Establishment of Regional Mineral Certification System (RCM): The International Conference on the Great Lakes Region (the implementation of the Pact on Security, Stability and Development in the Great Lakes Region) Bill No.16 was assented to. The ICGLR Act, 2017 is being implemented by the Ministry towards issuance of the first certificate for certified designated minerals from Uganda.

The Sub-sector has trained inspectors and developed an inspection manual, inspection template, export procedure and is now developing regulations to enforce the Act. The Sub-sector monitored and inspected mining activities in the country to promote the application of environmentally friendly technologies and methods in mineral exploitation, and ensure adherence to health and safety regulations.

Mineral Rights (licences): A total of 716 Mineral Rights (licences) were issued to promote mining investment. The Ministry also provided extension services and carried out awareness campaigns targeting small-scale miners through their associations so as to regulate their operations.

Geoscientific data management: The Sub-sector acquired and managed geoscientific data for strategic minerals i.e. uranium, gold, base metals, iron ore and wolfram. The Sub-sector monitored earthquakes using its installed Uganda seismic network to acquire data useful in monitoring of earthquake hazards. Geo-hazards investigation surveys for ground failures and landslides were conducted in Mt Elgon area.

Mineral Laboratories: The Sub-sector is up-grading the mineral laboratories to become the main analytical and beneficiation centre. Equipment and consumables for the laboratories have been procured and maintenance carried out. The up-graded laboratory will provide capacity to analyze materials for geological, hydrological and environmental studies.

Geothermal Investigation: The Sub-sector has completed surface geothermal investigation surveys at Kibiro and Panyimur areas. Preliminary conceptual models have been developed and sited 23 Temperature Gradient Wells (TWGs) at the two prospects. The TWGs have been

drilled in Kibiro and the results are being analyzed while at Panyimur, ESIA is being undertaken in preparation for drilling.

CONCLUSION

Despite the challenges in the Sector, there is steady progress in project implementation.

- i. Electricity extended to all sub-county headquarters by end of FY2020/21. This will greatly increase access rates to within the NDP targets.
- ii. Karuma Hydropower Project Construction is progressing steadily with commissioning of all units expected before end of FY 2020/21.
- iii. Refinery development is on course. The lead investor for the refinery is undertaking FEED and the PFA has been extended for 17 months.
- iv. The HGA for East African Crude Oil Pipeline (EACOP) was signed by the Government and EACOP and this paves way for attainment of FID.
- v. In the Mineral sector, a Policy has been put in place and the development of Sukuru Phosphates plant is nearing completion, while airborne mapping of Karamoja will soon commence.

Need to overcome key challenges

- i. Land Acquisition for government projects.
- ii. Funding in general for energy and mineral development infrastructure projects.
- iii. Enhancement of capacity and supervision of inspection in the mineral sector.

1. INTRODUCTION

1.1 Mandate

The mandate of the Ministry of Energy and Mineral Development is “To Establish, Promote the Development, Strategically Manage and Safeguard the Rational and Sustainable Exploitation and Utilization of Energy and Mineral Resources for Social and Economic Development.

1.2 Vision

A model of Excellence in Sustainable Management and Utilization of Energy and Mineral Resources

1.3 Mission

To ensure reliable, adequate and sustainable exploitation, management and utilization of energy and mineral resources in Uganda.

1.4 Roles and Functions

- i. To provide policy guidance in the development and exploitation of Energy, Mineral, Oil & Gas resources.
- ii. To create an enabling environment in order to attract investment in the development, provision and utilization of energy and mineral resources
- iii. To acquire, process and interpret technical data in order to establish the energy and mineral resource potential of the country
- iv. To inspect, regulate, monitor and evaluate activities of private companies in energy and mineral sectors so that resources are developed, exploited and used on a rational and sustainable basis

1.5 Goals

In order to contribute effectively to poverty reduction, the Sector’s policy goals are:

- i. To meet the Energy needs of Uganda’s population for social and economic development in an environmentally sustainable manner;
- ii. To use the country’s oil and gas resources to contribute to early achievement of poverty eradication and create lasting value to society; and
- iii. To develop the Mineral sector for it to contribute significantly to sustainable national economic and social growth.

2. SECTOR GOVERNANCE

2.1.1 Governance/ Institutional Structure

In order to achieve its mandate, the Ministry is supported by eleven agencies whose role is largely in implementation and regulation of the Sector Programs and activities; and the Ministry being responsible for provision of policy guidance in the sustainable development and exploitation of the Energy and Mineral resources, and creation of an enabling environment to attract investment.

The sector Institutions/Agencies include;

- i. Electricity Regulatory Authority (ERA);
- ii. Uganda Electricity Generation Company Ltd (UEGCL);
- iii. Uganda Electricity Transmission Company Ltd (UETCL);
- iv. Uganda Electricity Distribution Company Ltd (UEDCL);
- v. Rural Electrification Agency (REA);
- vi. Electricity Disputes Tribunal (EDT),
- vii. Atomic Energy Council (AEC),
- viii. Kilembe Mines Ltd,
- ix. The Uganda National Oil Company Ltd (UNOC),
- x. The Petroleum Authority of Uganda (PAU)
- xi. Uganda Energy Credit and Capitalization Company (UECCC)

2.1.2 Policy, Regulatory and Legislative Framework

The Sector is guided by a legal and regulatory framework informed by a number of Laws, Regulations, Policies and Guidelines as guided by the Constitution.

These include

- i. Electricity Act (1999) which provides a framework for regulation of the generation, transmission, distribution, sale, export and import of electrical energy in Uganda.
- ii. Energy Policy for Uganda (2002) and the Renewable Energy Policy 2007, with intent to meet the energy needs of the Ugandan population for social and economic development in an environmentally sustainable manner.
- iii. Rural Electrification Strategy and Plan (2013-2022) which is intended to position the rural electrification development programme on a path that will progressively advance towards achievement of universal electrification by the year 2040 and achieve a rural electrification access rate of 22% by 2021.
- iv. Petroleum Supply Act, 2003, which is intended to ensure an adequate, reliable and affordable supply of quality petroleum products for all sectors of the economy at internationally competitive and fair prices within appropriate health, safety and environmental standards.
- v. The National Oil and Gas Policy (2008) that guides the utilization of the country's oil and gas resources to contribute to early achievement of poverty eradication and create lasting value to society.

- vi. The Atomic Energy Act 2008 that regulates the peaceful application of ionizing radiation in Uganda.
- vii. Mining and Mineral Policy for Uganda, 2018; and the Mining Act, 2003:
- viii. The Petroleum (Exploration, Development and Production) Act of 2013 which regulates Petroleum Exploration, Development and Production.
- ix. The Petroleum (Refining, Gas Conversion, Transportation and Storage) Act of 2013.
- x. The Biofuels Act, 2018
- xi. Oil & Gas National Content Policy, 2018 which seeks to increase participation of Ugandan Citizens and their enterprises in the Oil and Gas Sector from 28% to 80% by 2040.
- xii. HIV/AIDS Workplace Policy, 2005
- xiii. Electricity Connections Policy, 2018
- xiv. Midstream Petroleum (National Content) Regulations, 2016
- xv. Midstream Petroleum General Regulations, 2016
- xvi. Midstream Petroleum HSE Regulations, 2016
- xvii. The Mining Regulations, 2019
- xviii. The Petroleum (Exploration and Production) (Conduct of Exploration Operations) Regulations, 1993
- xix. The Petroleum (Marking and Quality Control) Regulations, 2009.
- xx. The petroleum supply (general) regulations, 2009
- xxi. Upstream Petroleum General Regulations, 2016
- xxii. Upstream Petroleum HSE Regulations, 2016
- xxiii. Upstream Petroleum metering Regulations, 2016
- xxiv. Upstream Petroleum National Content Regulations, 2016
- xxv. Atomic Energy Regulations, 2012
- xxvi. The draft Geothermal Policy that seeks to effectively, develop and utilize Uganda's Geothermal resources for social and economic transformation.

2.1.3 Staffing Levels in the Sector

The importance of human resource cannot be overstated when it comes to optimum operations within an organization. The sector in recent times, despite of increased operations, has not been matched by a proportionate increase in human resource. Government has put in place programs to skill and train staff but due to budget constraints, this has not been possible across board and there still remain gapping vacancies in most agency structures within the sector. The table below summarizes the staffing levels within the Sector.

Table 1: Staffing Levels in the Sector

Institution	Approved Structure	Percentage of filled structure	
		FY2018/19	FY2019/20
Ministry of Energy and Mineral Development	449	59	63
Electricity Regulatory Authority	89	62	74
Atomic Energy Council	70	28	42
Petroleum Authority of Uganda	281	45	58
Electricity Disputes Tribunal	15	87	87
Uganda Electricity Generation Company Ltd	250	63	80
Uganda Electricity Transmission Company Ltd	338	68	99
Uganda Electricity Distribution Company Ltd	359	95	93
Rural Electrification Agency	168	87	57
Uganda Energy Credit and Capitalization Company	29	90	90
Kilembe Mines	250	64	50
Uganda National Oil Company Ltd	259	35	46

2.1.4 Budget Performance of the Sector for FY 2019/20

Parliament of Uganda appropriates resources to the Sector for the implementation of its Policies and Investment Plans through four (04) votes; shown in Table 2 below. The financing is drawn from the consolidated fund, Development Partners and the Private Sector. The support from Development Partners is usually in form of loans (commercial and/or concessional) and grants. Government, through liberalisation created an enabling environment for Public-Private Partnerships and increased Private Sector Investments in the Energy and Minerals sector.

Table 2: Budget Performance by Vote for FY 2019/20

VOTE	CATEGORY		FY2019/20 (Bn UGX)		
			Approved Budget	Released	Spent
MEMD 017	Recurrent	Wage	6.225	5.029	5.029
		N/wage	64.493	41.798	40.949
	Dev't	GoU	460.789	282.213	278.670
		Ext. Fin	1,333.167	906.261	654.365
		Arrears	0.578	0.578	0.427
		AIA	0.000	0.000	0.000
	Vote Total		1,865.250	1,235.301	979.012
REA 123	Recurrent	Wage	15.813	15.813	10.439
		N/wage	22.802	15.244	13.620
	Dev't	GoU	128.139	54.638	54.236
		Ext. Fin	894.088	572.595	365.514
		Arrears	0.000	0.000	0.0000
		AIA	0.000	0.000	0.000
	Vote Total		1,060.842	658.291	443.809
UNOC 311	Recurrent	Wage	19.570	18.844	18.844
		N/wage	11.901	10.558	10.558
	Vote Total		31.470	29.403	29.403
PAU 312	Recurrent	Wage	18.331	18.331	18.157
		N/wage	31.868	23.757	23.002
	Dev't	GOU	0.000	1.528	1.528
	Vote Total		50.199	43.616	42.687
SECTOR GRAND TOTAL			3,007.761	1,966.611	1,494.911

2.1.5 Performance of Sector Governance against NSI for FY 2019/20

The National Standard Indicator framework was designed for monitoring performance of government sectors against a set of indicators which are derived from the NDP. The Table 3 below shows a three-year trend performance of sector governance against the NSI.

Table 3: Sector Governance Performance against NSI

Performance Indicator	FY2017/2018	FY2018/19	FY2019/20
Number of laws and policies developed and reviewed	8	4	5
Proportion of MEMD approved structure filled	56%	58%	63%
Level of Compliance of planning and Budgeting instruments to NDP II	64%	55%	51%
Budget Absorption rate	66%	78%	76%
Compliance with Gender Based Budgeting	55%	51%	65%

2.2 Implementation Status of Sector Governance Undertakings for FY 2019/20

Table 4: Implementation Status of Sector Governance Undertakings for FY 2019/20

Undertaking	Status
<p>Compliance of sector planning and budgeting instruments to the National Vision 2040</p> <p>i. Development of the Sector Strategic Development Plan FY2020/21 – FY 2024/25 and its associated M&E Framework</p> <p>ii. Coordination of the development of subsector specific master plans</p>	<p>(i) The Draft SDP FY2020/21-FY2024/25 aligned to the NDP III is in place and final stakeholder engagements shall be undertaken.</p> <p>(ii) The development of the subsector master plan was coordinated in the Energy, Petroleum and Mineral Subsectors</p>
<p>Scale up the Statistical Database to cover Minerals, Oil & Gas Subsectors with gender disaggregation and alignment to the NSI Framework</p>	<p>Include status on the Energy Section. Terms of Reference have been developed and procurement process for the Consultant commenced.</p>
<p>Insufficient Sector funding: Develop at least four bankable project proposals</p>	<p>Six projects were developed and admitted into the Public Investment Plan. These include</p> <ul style="list-style-type: none"> i. Project 1594: Retooling of Ministry of Energy and Mineral Development (Phase11) ii. Project 1596 Retooling of Petroleum Authority of Uganda iii. Project 1610: Liquefied Petroleum Gas Supply and Infrastructure iv. Project 1611: Petroleum Exploration and promotion Frontier basins v. Project 1654: Power supply to Industrial Parks and Transmission Line Extension. vi. Project 1612 National Petroleum Data Repository Infrastructure
<p>Filling MEMD approved structure: Fill staff structure to at least 70%</p>	<p>Submission was done to Public service Commission to fill 20 positions which has improved the MEMD staffing from 59% to 63%.</p>
<p>Complete at least one (1) Mineral Beneficiation Center</p>	<p>Construction of the Mineral Beneficiation Centers in Fort Portal City and in Rwengoma in Ntungamo District is progressing, with progress at 35% and 70%, respectively.</p>
<p>Implement Policy Direction on Proposed mergers of Sector entities</p>	<p>Halted by cabinet for further consultations.</p>
<p>Strengthening Integrated Planning at District and inter-agency level</p>	<ul style="list-style-type: none"> • Integrated Energy planning in LGS plans under pilot in the selected districts in Lango and west

Undertaking	Status
	<p>Nile.</p> <ul style="list-style-type: none"> Awareness and capacity development on energy planning in LGs ongoing.
Develop a Risk Management Policy for the Ministry	Procurement of the consultant interrupted by Covid-19 Pandemic.
Install solar as an alternative energy source at Amber house	Terms of reference were prepared and awaits financing
Review the staff retention strategy of the MEMD	Not Reviewed due to Covid -19 lockdown
Mainstreaming of climate change in project activities and outputs	Mainstreaming of climate change ongoing. Two sectoral Nationally Appropriate Mitigation Action (NAMAs) finalized; one NAMA already achieved financing and is under implementation. The 2nd NAMA sourcing for funding.
Alignment of the Sector performance indicators to the sustainable development goals indicators and targets	Aligned in NDP III and the draft EMD SDP

2.2.1 Challenges to Sector Governance performance

- i. Inadequate staffing levels
- ii. High Staff attrition rates
- iii. Inadequate Funding

2.2.2 Strategies and Measures to overcome the Challenges

- i. Continue engaging MoFPED for additional wage to cater for newly approved vacancies in the MEMD structure and the agencies.
- ii. Strengthen the coordination of work across the sector agencies for improved service delivery.
- iii. Enhance and corroborate capacity building programs.

2.2.3 Plans and strategies for FY2021/22

- i. To have an up-to-date statistical data base for the sector
- ii. Finalize the review of the HIV/AIDS Workplace policy.
- iii. Finalize the development of the Sector Gender Policy.
- iv. Fill the approved structure to at least 75%.
- v. Develop the attraction and retention strategy for the sector.
- vi. Establish child care centers at the workplace.

3. POWER SUB-SECTOR

3.1.1 Introduction

The Power Subsector is comprised of Electricity Generation, Transmission, Distribution and Regulation. This section of the reports provides detailed performance of the Subsector to the implementation of agreed undertakings for the FY2019/20 and the National Standard Indicators.

3.2 Power Sector Regulation

The Electricity Regulatory Authority is a Statutory Body established in the 2000, under the Electricity Act, 1999, to regulate the Generation, Transmission, Distribution, Sale, Export, and Import of Electrical Energy in Uganda.

In addition to ensuring compliance with the set License conditions by Licensees, ERA also advises the Minister of Energy and Mineral Development on project needs in the Electricity Supply Industry among other functions. Detailed below is the implementation status of Power Sector regulation undertakings for the FY2019/20, strategies and priorities for the FY2021/22.

3.2.1 Implementation Status of Power Sector Regulation Undertakings for FY 2019/20

Table 5: Implementation Status of Power Sector Regulation Undertakings for FY 2019/20

Agreed Undertakings	Progress Undertakings	Challenges	Measures to mitigate challenges
Review all regulations enacted in 2003 for possible amendment.	Reporting and record keeping 2019 regulations were enacted. Also, the Electricity (corporate governance) guidelines have been rolled out. Revision and repeal of all regulations developed more than ten years ago is ongoing. So far IPC & Reporting Regulation have been approved.	Time constraint in relation to the rigor to complete the review.	Involvement of Consultant services to partner with internal staff to hasten the review.
Develop a legal framework for off-grid and mini-grids	The Draft legal framework was completed	Lengthy review process.	Engage Solicitor general's office in time to address all concerns in time.
Develop legal	Draft completed but it		

regulations for tariff filling rules.	was resolved that the Tariff filing rules would be integrated into the Tariff Code which is a comprehensive document covering tariffs and the design process.		
Enforce compliance to licensing conditions, the electricity Act and Authority regulations of all licensees.	<ul style="list-style-type: none"> • Compliance level for licensees at project construction is 90%, GENCOs at operational stage is 87% and DISCOs is 75%. • The improvement is attributed to the Education and sensitization of licensees on their compliance obligations and enhanced enforcement for non-compliant licensees 	<ul style="list-style-type: none"> i. Lean staffing for compliance reporting by Licensees. ii. Insufficient funding within the licensees to meet the compliancy parameters 	
Conduct periodic tariff reviews with an intention to reduce the end-user tariff.	<ul style="list-style-type: none"> i. Six (6) tariff reviews conducted in the years leading to 5 tariff decisions with marginal reduction in tariff by Umeme service area. ii. Introduced Declining block tariff with reduced tariffs for higher consumption. 	<ul style="list-style-type: none"> • Volatile macroeconomics variables like exchange rate and Oil prices. • High capital requirement for project development. 	Attract local financing to reduce Foreign exchange exposure by foreign investors.

Prepare report for state of environmental resource of the electricity industry.	In the FY2019/20, the average performance of GENCOs at construction was 80.6%, GENCOs at operation was 87.3%, DISCO was 73.8% and TRANSCO was 69%.	Limited personnel to undertake environment resource monitoring.	The Authority will collaborate with relevant lead agencies such as DWRM and NEMA to ensure full compliance with environmental requirements.
Review Performance of distribution utilities against the targets for the year.	Review of performance targets for Umeme, PACMECS, WENRECO and UETCL were completed.		
Implement a regulatory information management system (RIMS) to ease Stakeholder Information Sharing.	The procurement process for the service provider of RIMS is still ongoing and is expected to be completed in 2020/2021.	Long procurement process and limited financing to implement the entire solution.	The RIMS solution will be delivered in 2 phases with 2 funders.
Enforce compliance to standards in the electricity supply Industry.	<ul style="list-style-type: none"> i. During the financial year, ERA conducted inspections of 35 power generation plants with an overall level of compliance standing at 87%. ii. UETCL achieved a compliance score of 68.09% in FY 2019/20 as compared to 66.67% in the last FY. iii. The overall compliance level 		

	of the Nine (9) Distribution companies inspected during the reporting period was 76%.		
Ensure improvement in the quality of supply and service	Umeme Quality of service Compliance level was at 75% while Other distribution companies achieved 51% in the financial year. The Average customer outage duration is at 15.8 hours per month.	The decline in performance is attributed to delays associated to the implementation on ECP and limited automation to allow timely response to faults by operators.	<ul style="list-style-type: none"> • Government of Uganda will oversee the acquisition of the required additional funding for ECP. • ERA approved investment in the expansion of SCADA to facilitate automation live monitoring of the distribution and transmission of the national Grid. • Approval of investments to boost the poorly performing feeders. • Monitoring the execution of annual maintenance plan
Increase stakeholder consultation in respect of regulatory matters.	Held 6 Public hearings regarding tariffs and quality of service aspects.	Constraint in movement due to covid19.	Increased online stakeholder engagements

3.2.2 Other key sector achievements in FY 2019/20

Completed the Umeme Multiyear performance review 2019/2025.

In accordance with the Licence and Section 43 of the Electricity Act, Umeme Limited applied for modification of the Licence for Supply of Electricity. The Authority at its 319th meeting, made a decision to affect the modification of Licence No. 48 issued to Umeme Limited. The Overall Distribution Loss Factor, Distribution Operating and Maintenance Costs (DOMC), Distribution Efficiency, Days Lag, and Uncollected Debt Factor as set and approved by the Authority for the period 2019 -2025 for Umeme are summarized in 6 below.

Table 6: Umeme Approved Tariff Performance Plan for 2020 - 2025

Parameters	2020	2021	2022	2023	2024	2025
Overall Distribution Loss Factor	14.40%	14.0%	13.4%	13.19%	12.92%	12.7%
DOMC (USD \$ 000)	52,127	54,737	57,419	60,598	66,456	70,485
Distribution Efficiency DEF (%)	0%	0%	0%	0%	0%	0%
Days Lag (DY)	0	0	0	0	0	0
Target Uncollected Debt Factors TUCF	0.30%	0.21%	0.16%	0.12%	0.08%	0.05%

Completed UETCL Multiyear performance review 2020/2022.

In 2019, following an application by Uganda Electricity Transmission Company Limited (UETCL), the Authority approved renewal of the Licences issued to UETCL and approved tariff performance parameters for the period 2020 – 2022 as shown in 7 below.

Table 7: UETCL Performance Parameter 2020 - 2022

Year	2020	2021	2022
Transmission Loss Factor	3.35%	3.29%	3.03%
Net Total Transmission Costs (Ush. Mn)	105,761	65,736	75,145

Introduced the Declining block Tariff framework for demand growth.

Implementation of the declining tariff block was effected on 1st January 2020 starting with large and extra-large consumers. This is intended to incentivise additional demand by giving lower tariff for any additional energy consumption from a consumer beyond the set threshold. The Authority has commenced with the monitoring of the impact of this tariff and the consumption statistics submitted by the distributors shall inform the review of the thresholds in the 2021 tariff review.

Legislation in support of Regulators' Mandate

One of ERA's core mandate is to make regulations and develop and enforce performance standards for the Electricity Supply Industry. During the period under review, the following regulations, policies, performance standards and guidelines have been developed and updated as shown in the Table 8 below.

Table 8: Regulations, Policies and Guidelines

NAME	OBJECTIVE	STATUS
NEW REGULATIONS		

The Electricity Investment Approval and Verification Regulations	To enhance transparency, predictability and enforceability of the current framework for approval and verification of investments.	Review finalised
The Electricity (Uniform System of Accounts) Regulations	To provide a streamlined framework for accounting and reporting by Licensees.	Review finalised
AMENDMENTS		
The Electricity (Quality of Service) Regulations	To enhance provisions of the current Quality of Service standards and provide for penalties in case of licensees' failure to comply.	Advanced stages of enactment.
GUIDELINES, POLICIES AND STANDARDS		
The Electricity (Licence Exemption) (Isolated Grid System) Guidelines	To provide detailed criterion for licensing and regulation of isolated grid systems	Advanced stages of enactment.

3.2.3 Plans and strategies for FY2021/22

- i. Roll out Lifeline tariff for all service territories;
- ii. Promote and encourage growth in demand to at least 12%
- iii. Promote the Increase of electricity consumption per capita to 250kWh
- iv. Increase in Generation capacity to 2,000MW
- v. Implement the Regulatory Information System to support automation of licensee reporting.
- vi. Support the Review of Umeme Concession
- vii. Implement the Independent Power Transmission Framework
- viii. Reduce the duration of interruptions per customer per year to 78Hr

3.3 Power Generation

Uganda Electricity Generation Company Limited (UEGCL) is a Public Limited Liability Company incorporated in March 2001 in conformity with the Electricity Act, 1999 to establish, acquire, maintain and operate electricity generation facilities and to promote Research and Development in the Electricity generation sector while running on sound business principals.

During the year under review, the company successfully operated and maintained the 183MW Isimba HPP achieving a one-year plant availability of 98.14% against a target of 97%; and 279.31GWh energy generated against a target of 396GWh.

The Company is also expected to commence operation and maintenance of the 50MW Namanve HFO Thermal Power Plant in September 2020 as a way of expanding the Country's Energy Mix Profile.

3.3.1 Implementation Status of Power Generation Undertakings for FY 2019/20

Table 9: Implementation Status of Power Generation Undertakings for FY 2019/20

Undertakings	Progress on undertakings	Challenges	Measures to mitigate the challenges
LARGE HYDROPOWER PROJECTS (Karuma, Isimba, Ayago)			
Commission of Karuma HPP	<p>Overall project progress now stands at 97.8%</p> <p>First unit expected to be commissioned in November 2020 with the last unit expected in March 2021.</p>	<ul style="list-style-type: none"> • Land acquisition for the areas to be submerged is still pending. • Covid-19 pandemic has limited the travel of EPCC engineers and materials. The number of staff on site was reduced as per the set Covid-19 guidelines. • The prevailing COVID-19 pandemic has brought about Force Majeure in accordance with Clause SCC 62 with the possibility of further time extensions. 	<ul style="list-style-type: none"> • MEMD engaged a consultant (Air Water Earth Ltd) to conduct the reservoir social, environmental assessment, and RAP. • Due to the easing of the Lock down, EPCC has been requested to submit a revised implementation and catch-up plan to ensure the project is completed on time. • UEGCL & OE are monitoring EPCC's compliance to agreed control measures.
Complete Feasibility study for Nalubaale complex rehabilitation and	<ul style="list-style-type: none"> • Consultant is currently implementing additional scope 	<ul style="list-style-type: none"> • The activities were slowed down due to the Covid-19 pandemic. 	<ul style="list-style-type: none"> • Considering having virtual presentations of the findings.

Undertakings	Progress on undertakings	Challenges	Measures to mitigate the challenges
implement recommendations from study.	<p>under phase 2 of the study and a draft report is expected in September 2020.</p> <ul style="list-style-type: none"> • The final report is expected in October 2020. • A stakeholder presentation will be organized probably virtual to discuss the findings and agree on the most viable option. • EIA will be conducted after agreeing on the most viable option. 	<ul style="list-style-type: none"> • The project is on the PIP list. • Increased lake levels have necessitated carrying out additional studies on flood control and spillway capacity. 	<ul style="list-style-type: none"> • Need to engage MoFPED on the inclusion of this project onto the PIP. • Engaged KfW for additional funding.
Commencement of O&M for the Karuma & Isimba hydropower stations.	<ul style="list-style-type: none"> • Isimba O&M commencement after commissioning. • A master plan for the employers' camp for Isimba was developed which gave an estimate of UGX 130 bn. • Karuma O&M preparation on-going. Recruitment of O&M staff has been on-going as per the approved man-power plan. 	<ul style="list-style-type: none"> • Limited accommodation facilities for the O&M staff. The situation worsened during the lockdown as staff had to stay permanently on site to control the spread of Covid-19. • Delay to close out most of the snags due to Covid-19 pandemic. • Delay by the contractor to finalize and submit the As-built 	<ul style="list-style-type: none"> • GoU provided some funding to kick start the construction of the employers' camp. There is still a deficient of resources. Need to continuously engage with MoFPED. • EPCC notified to request for extension of the DLP period to cover the lockdown period. • Covid-19 SOPs developed for site operations

Undertakings	Progress on undertakings	Challenges	Measures to mitigate the challenges
		drawings. These are critical and need to be used during DLP.	with support of the Ministry of Health.
Commence Construction of the Muzizi hydropower project.	<ul style="list-style-type: none"> • Evaluation of the EPC tenders completed. Awaiting a No Objection from KfW. • Special meeting chaired by the Hon. Minister of Finance between UEGCL, AFD and KfW was held. Both AFD and KfW were asked to come to a common position in regard to the way forward on the EPC procurement. • 40% of RAP implemented and activities to acquire 100% of project land is on-going. 	Delay to obtain No Objections from funders at the different stages of the project.	Continuous engagement with the funders.
20% construction of 5.5MW Nyagak III	<ul style="list-style-type: none"> • Project is being developed as a PPP under the GENMAX SPV • Physical progress now stands at 19% • RAP implementation stands at 71%. • The binding documents for the SPV are being reviewed. 	<ul style="list-style-type: none"> • Delay to achieve financial closure by the Private partner. • Payment settlement claim by the Kaal Paidha Umua Chiefdom. 	<ul style="list-style-type: none"> • The GENMAX Board has continued to engage the private partner. • UEGCL with support from CGV and Ministry of

Undertakings	Progress on undertakings	Challenges	Measures to mitigate the challenges
60% implementation of activities in the CDAP for Karuma and Isimba HPP	<p><u>Isimba CDAP</u></p> <ul style="list-style-type: none"> • The physical progress of the first phase stood at 90%. These will be commissioned before end of 2020. • The contractor for tree planting was procured and work is expected to start. • The procurement process for contractors of both the Rural Electrification and Water & Sanitation schemes under Phase 2 for both Kamuli and Kayunga is on-going. Implementation is expected to commence by end of 2020. <p><u>Karuma CDAP</u></p> <ul style="list-style-type: none"> • No funds released for this activity. • Preparatory works on-going and UEGCL expected to utilize the experience gained from 	<ul style="list-style-type: none"> • Progress was slowed down during the Covid-19 lockdown. • There is some funding gap. 	<ul style="list-style-type: none"> • Contractors presented updated schedules. • MEMD engaged to provide the additional funds for CDAP implementation.

Undertakings	Progress on undertakings	Challenges	Measures to mitigate the challenges
	implementing the Isimba CDAP.		
ESKOM CONCESSION			
Complete procurement of contractor to refurbish NPS Unit 10 blade servo.	<ul style="list-style-type: none"> Eskom technical team disassembled the unit for scoping and carrying out detailed assessment. The scoping will give an indication of what spares need to be procured and the extent of work to be done. 	Activity was slowed down by Covid-19 pandemic.	
Complete procurement NPS Unit 3 & 5 Generator transformers.	The project is currently under design review.	Covid-19 might affect the implementation schedule that includes factory acceptance tests.	
Replacement of 11 kV Cables for NPS to reduce forced outages and improve plant health.	The consignment is expected in Mombasa by end of August 2020.	Eskom and UEGCL engineers failed to travel for factory acceptance tests in South Africa due to travel restrictions.	Eskom contacted the technical team at Eskom South Africa to witness the factory tests.

3.3.2 Other key sector achievements in FY 2019/20

- i. **GETFiT:** During the reporting period under review, GET FiT Uganda programme made further progress with the commissioning of four additional small hydropower projects, namely Sindila, Siti 2, Kyambura and Ndugutu. This added over 35 MW in installed capacity and an estimated annual generation of 162 GWh to the Ugandan National Grid. In total, 14 of the 17 projects in the portfolio were operational at the end of 2019, representing 122 MW (77 %) of the targeted 158 MW of installed capacity. The remaining three projects are expected to be commissioned by the end of FY2020/21
- ii. **Grant support from the Norwegian Government**

Phase II technical support at Karuma has been postpone and this will be carried out after lifting the travel restrictions. In the event that the situation is not normalized, this support will be cancelled and grant returned to the Development partner. The Norwegian Government has also provided a 5 Year grant support code name the HOME (Hydropower Operation and Maintenance Excellence).

iii. **Grant support from Germany Government**

The Germany Government through KfW provided grant support to conduct feasibility study to inform the extent of rehabilitation works for NPS and KPS. This project is on-going and draft reports are expected in September 2020 with the final report expected in October 2020.

iv. **Grant support from the European Union through the EU-Africa Infrastructure Trust Fund channelled through the AFD – studies for Small Hydropower Plants (Okulacere 6.3 MW, Agbinika 2 MW and Maziba 1 MW)**

As part of its drive to ensure continuity in supply of electricity, especially to the far distant remote areas, UEGCL, with assistance from the French Government embarked on the feasibility study of the three sites mentioned above. The preliminary studies have indicated that only two sites are viable. The technical studies are expected to be completed by end of 2020. The ESIA studies will be completed during the first half of 2021.

v. **Support from AFD to conduct a Financial Sustainability study for UEGCL**

AFD procured a consultant to assist UEGCL carryout a financial sustainability study. This study has been affected by Covid-19 travel restrictions as the experts failed to travel to conduct stakeholder meetings. These meetings will now be conducted on the virtual platforms.

vi. **Support from USAID/Power Africa to develop an Energy Mix Strategy for UEGCL**

United States Energy Association (USEA) procured a consultant on behalf of USAID to assist UEGCL in the development of the Energy Mix Strategy. This study has been affected by Covid-19 travel restrictions as the experts failed to travel to conduct stakeholder meetings. These meetings are now being conducted using the virtual platforms.

vii. **Projects implemented at Eskom**

The following projects were implemented at NPS and KPS power plants;

- Replacement of the protection system for 2 units at KPS
- U6 excitation modification
- Replacement of U11, 12 and 13 circuit breakers
- Replacement of the KPS station and switchyard computers



Picture 2: The Speaker of Parliament Rt. Hon. Rebecca Kadaga commissioning one of the CDAP projects in Kamuli District.



Picture 1: An aerial view of the machine floor at the 600MW Karuma Hydropower Plant.



Picture 3: An Aerial view of 183MW Isimba Hydropower Plant

3.3.3 Challenges to performance and measures undertaken to remedy

- i. Inadequate funding to drive the UEGCL Strategic Plan; UEGCL has presented its Strategic Plan to various stakeholders, including the Government. It is envisaged that financial support will be accorded to fulfil its Strategic plan aspirations.
- ii. Delayed Financial Closure for the Nyagak III HPP; Ministry of Finance Planning and Economic Development to provide some funding for the Project.
- iii. Limited budget to provide housing facilities for O&M team at Isimba HPP. Government has provided funding but this will cover a few housing facilities on site. There is need to provide phased funding to implement the employers' camp master plan.
- iv. Floating Island that docked at NPS intake and caused massive blackout in the whole country. There is need to protect the buffer zones of Lake Victoria and River Nile as per the Presidential

3.3.4 Plans and strategies for FY2021/22

- i. Commission Karuma HPP and start O&M.
- ii. Muzizi HPP construction commencement i.e. mobilization, construction of workers camps, site offices, access roads and other temporary structures.
- iii. Finalize Feasibility study for rehabilitation of NPS and KPS and start sourcing for funds to carryout rehabilitation works.
- iv. Increased installed capacity (UEGCL) from 380MW to 1,163MW.
- v. Takeover and start O&M of the Namanve 50MW HFO Thermal Power Plant.
- vi. Source for funding for rehabilitating Maziba SHPP and the construction of new Okulacere green field site.
- vii. Finalize the Isimba CDAP projects and handover to the communities.
- viii. Launch the Karuma CDAP projects.
- ix. Complete the Financial Sustainability study and implement the recommendations.
- x. Complete the development of the Energy Mix Strategy and implement some of the quick wins.
- xi. Continue working with MEMD-DGSM on the development of geothermal energy.

3.4 Power Transmission

The Uganda Electricity Transmission Company Ltd (UETCL) is a statutory body incorporated under the Company's Act in conformity with the Electricity Act 1999 to manage the high voltage electricity transmission infrastructure the country. Detailed below is the Company's implementation status of power transmission undertakings for the FY2019/20.

3.4.1 Implementation Status for Power Transmission Undertakings for FY 2019/20

Table 10: Implementation Status for Power Transmission Undertakings for FY 2019/20

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
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Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
100% completion of Bujagali-Tororo-Lessos 220kV, 127km line	EPC works progressed to 77%.	Unavailability of the Contractor on ground due to lengthy procurement process	Request has been compiled to be submitted to GOU to allow the required personnel travel to Uganda for the works to commence.
100% completion of Tororo – Opuyo – Lira 132kV, 260km line	Overall completion is 91% <ul style="list-style-type: none"> • <i>Completed Foundations: 710/724 (98%);</i> • <i>Erected towers: 674/724 (93%);</i> • <i>Stringing: 196/263km (74%)</i> • <i>RAP Implementation is 93% (4,379/4706) complete</i> 	There has been resistance from the local population who demand for compensation beyond the approved amounts. Court injunctions in Tororo have delayed project completion.	Continuous engagements with the PAPs to secure access to various sites
Industrial Parks and associated substations <ul style="list-style-type: none"> •Luzira Industrial Park 3X40MVA, 132/33kV Substation and Line (15km) •Mukono Industrial Park 3X60MVA, 132/33kV Substation and Line (5km) •Iganga Industrial Park 2X40MVA, 132/33kV Substation and Line (10km) •Namanve South 	Substations: <ul style="list-style-type: none"> • Luzira- 98% • Iganga -100% • Namanve- 98% • Mukono- 100% Transmission lines: <ul style="list-style-type: none"> • NamanveSouth-Luzira- 10% • Namanve North-Namanve South – 78% • Mukono T-off - 100% • Iganga T-off - 100% RAP implementation Overall RAP implementation is 59% complete (416/707 PAPs paid).	Namanve South Transmission Line Corridor Acquisition has been faced with delays. Luzira Transmission Line Construction has faced challenge of rising lake level that has submerged the construction sites.	Continuous engagement with the PAPS as well as relevant ministries.

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
3X60MVA, 132/33kV Substation and Line Project (5km)			
100% completion of Karuma Interconnection Project	<p>Overall percent Completion is at 90%:</p> <ul style="list-style-type: none"> • <i>Karuma-Kawanda line 95%</i> • <i>Karuma-Lira line 70%</i> • <i>Karuma-Olwiyo line 93%</i> • <i>Karuma substation 92%</i> • <i>Kawanda substation 93%</i> • <i>Lira substation 90%</i> • <i>Olwiyo substation 55%</i> <p>RAP implementation 86% (3641/4185)</p>	<p>Lack of sites for contractor to work and string caused delays in progression of works. Material have been stolen/vandalised from installed towers.</p>	<p>Negotiations with the PAPs disputing the compensation have been held to come to an agreement and avail sites. New material orders have been made to replace the stolen parts.</p>
Mutundwe-Entebbe 132kV transmission project	<p><i>Overall project progress is at 46%</i></p> <ul style="list-style-type: none"> • <i>Mutundwe-Entebbe transmission line progress at 50%</i> • <i>Mutundwe and Entebbe Substations progress at 42%</i> <p>RAP implementation at 79% (843/1062).</p>	<p>Low disbursements on the loan mainly caused by delayed completion of design which led to late manufacturing.</p>	<p>Increased pressure on the Contractor to avoid further delays. Top management meetings with contractors have been held to get them to commit and also take key decisions and actions.</p>
Complete construction of Opuyo substation upgrade	<p>Overall progress at 93% completion.</p> <ul style="list-style-type: none"> • Design 100% • Procurement 100% • Construction 85% 	<p>Contractor has cash flow challenges and thus having difficulty in mobilising the</p>	<p>Contractor to mobilise more local personnel to complete pending works.</p>

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
		resources required for completion of pending activities. Some key personnel unable to travel to Uganda owing to COVID-19 travel ban.	
Continue construction of Opuyo-Moroto 132kV to 80% EPC and 95% for RAP.	Overall completion at 74.7% <ul style="list-style-type: none"> Opuyo-Moroto at 79.8% Moroto and Opuyo Substations at 69.4% RAP Implementation is 93% (1209/1300) complete.	Challenges with transfer of project funds to Uganda, owing to sanctions on contractor's country. Slow civil works due to varied soil profiles through expansive soils and rocky layers along the depths of excavations	
Construction of Mirama – Kabale 132kV up to 70% completion. RAP implementation at 80%	Overall progress is 0% <ul style="list-style-type: none"> Mirama-Kabale transmission line at 0% Mirama and Kabale substations at 0% RAP implementation: 65% (1622/2494) PAPs paid.	There were delays during the procurement process were retendering of the substations lot had to be done.	The challenges have been overcome. The transmission line contract was signed and works commenced.
Construction of Gulu-Agago 132kV up to 20% completion	Overall progress is 0% <ul style="list-style-type: none"> Gulu-Agago transmission line at 0% Gulu and Agago substations at 0% RAP implementation: 94% (1375/1459) PAPs paid.	Commencement of works has delayed owing to the procurement process that has taken longer than was anticipated. Earlier delays in approval of tender documents led to	Discussions have been held with the financier to clarify issues noted so as to get the contracts approved, signed to pave way for start of works. The required ROW

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
		delayed achievement of subsequent activities.	has to be fully acquired so that contractor can work quickly without any hindrance.
50% completion of Lira – Gulu – Nebbi – Arua 132kV	<p>Overall progress is 0%</p> <ul style="list-style-type: none"> Lira (Kole)-Gulu-Nebbi-Arua transmission line at 0% Kole, Gulu, Nebbi and Arua substations at 0% <p>RAP implementation:</p> <p>Overall RAP Implementation at 73% of PAPs paid.</p> <ul style="list-style-type: none"> Kole-Gulu T-Line Corridor acquisition at 97% (964/994) PAPs paid Gulu-Nebbi –Arua corridor currently 65% (1521/2339) PAPs paid Kole, Nebbi, Arua and Gulu substations acquisition 100% complete; 	The project has experienced procurement delays	Through following up with approvers, the challenges have been overcome and now the contracts have been signed.
30% completion of Electrification of Industrial Parks and Free Trade Zones (Kapeeka, Sukulu, Mbale, Wobulenzi, Nakasongola, Kaweweeta &	Currently ESIA and RAP studies are being undertaken at 50%	Commencement of works for category 1 projects has delayed owing to the delayed financial closure due to COVID 19 pandemic interruptions	Thorough following up with China Exim Bank, MoFPED, and CAMCE Ltd to have the financial closure achieved at the earliest.

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
Associated Transmission Lines)			
30% completion of Masaka – Mbarara 220kV	<ul style="list-style-type: none"> • Consultant for design, specification and supervision of project was procured. • UETCL reengaged a new consultant through amendment of the JV Partnership following withdraw of the lead party. • Preparation of designs and specifications ongoing. • RAP implementation still at 0% progress. • Currently ESIA and RAP study updates are being undertaken to meet financier’s requirements and at 80% 	<ul style="list-style-type: none"> • Delayed loan Effectiveness • Delayed commencement of design and procurement of EPC Contractors • Delayed start of wayleaves Acquisition 	<ul style="list-style-type: none"> • The challenge of loan effectiveness has been overcome due to fulfillment of all conditions for disbursement of the loan • Delayed commencement of design and procurement of EPC Contractors has been overcome through re-engagement of the supervision consultant • Discussions have been held with the financier to harmonize issues raised for implementation of RAP to the required financiers’ standards in order to commence payments to PAPs
20% completion	<ul style="list-style-type: none"> • Consultant for design 	Covid-19 has	The consultant was

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
of Kampala Metropolitan Transmission Project	<p>and supervision of project was procured. Preparation of designs and specifications ongoing.</p> <ul style="list-style-type: none"> • RAP Implementation is at 75% (98/130) payments. 	<p>slowed down the progress of activities as foreign consultants have not been able to travel into the country to carry out the necessary field activities.</p>	<p>advised to utilize the services of the local counterparts to carry out the necessary field activities.</p>
Procurement of EPC Contractor and supervision consultant (sign contracts) for 132kV Bulambuli – Mbale 132kV transmission project	<ul style="list-style-type: none"> • Terms of Reference for consultancy for design, specification, tender document preparation, and supervision of works were prepared and are under review. • Loan negotiations for the project have been held. Revised Draft financing agreement to be shared by KfW after agreeing on a few pending issues as per last negotiation meeting held in June 2020. • Cabinet Paper to seek for approval for the project loan for EPC is currently under preparation 	<p>The project funding has taken long to get confirmed. The project loan was negotiated but still pending approval by Cabinet and Parliament.</p>	<ul style="list-style-type: none"> • Fast tracking of acquisition of requisite approvals is being done. This would enable securing of project funds from KfW that are tagged to a deadline of December, 2021 in the event that there is no implementation agreement yet. • A report on the most optimal solution for the clustering evacuation plan for the several minihydro power plants was prepared by REA and UETCL. Preparation of project profile and cost

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
			estimation of the cluster stations and sourcing for the corresponding Financing by REA are ongoing.
Complete ESIA/RAP Bulambuli - Mbale for 132kV	Procurement of Detailed ESIA Consultancy is at final stages as the Contract is planned to be signed in September, 2020. Procurement for RAP Study Consultancy is yet to commence.	The COVID 19 pandemic travel restrictions have led to the delay in commencement of RAP Study Consultant.	Contracting a local consultancy firm has been considered as opposed to foreign firms that will be affected by COVID-19 travel ban.
Procurement of EPC Contractor and supervision consultant for Uganda – South Sudan 400kV	No progress registered yet. The project is still at feasibility study stage.	-Project does not have confirmed funding yet. -The challenges in coordination and data collection in South Sudan have delayed the conclusion of the feasibility studies -The COVID 19 pandemic affected project progress especially field-based activities	-The private investor has initiated funding discussions with MoFPED in parallel with fast tracking the completion of the feasibility study.
Complete Feasibility studies for Industrial Parks (Rakai, Mubende, Ishaka, Jinja) & Substation Upgrades	Feasibility studies have not commenced yet (Rakai and Mubende SS). Ishaka, Jinja industrial park substations have been repackaged under Grid Strengthening and Industrial park phase 3 project. The project	Project does not have confirmed funding yet. Due to COVID-19 pandemic and international travel restrictions, international consultants may	Allocation of funds in the National budget. Conclusion of grant financing arrangements between GoU and Government of Sweden for undertaking of

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
(Nkonge & Lira)	includes Upgrade of Nkenda – Fortportal – Hoima transmission line to 220kV and related substation works at Nkenda, Fortportal, Lyanda and Hoima; and power supply to industrial parks at kabaale, Jinja, kasese and Ishaka. TOR for the Feasibility study, ESIA and RAP consultant have been drafted, and GoU is currently engaging with Government of Sweden for funding of feasibility studies and implementation.	not be able to travel to Uganda to participate in procurement and/or to undertake studies	Feasibility studies Government of Sweden to engage GOU to allow the required personnel travel to Uganda for the works to commence.

3.4.2 Other key sector achievements in FY 2019/20

Achievements as System Operator in FY 2019/20

UETCL holds the role of system operator, bulk power purchase and sale under the licenses given to it by the Regulator. In addition, UETCL acquired a license to be a public infrastructure service provider. It has installed Optical Fibre network along its High Voltage Transmission Grid which is used under license. The performance in executing the responsibilities under the system operator license is presented below.

Table 11: UETCL Performance Review at December 2019

Year	2015	2016	2017	2018	2019
Maximum System Demand (MW)	560.1	579.3	630.9	649.11	725.21
Uganda Maximum Domestic Demand (MW)	520.68	534.1	568.8	597.28	630.90
Total Domestic Energy Generation (GWh)	3,283.28	3,494.65	3,851.19	4,037.46	4362.99
Total Kenya Net Energy Export / (Import) (GWh)	11.38	46.28	216.31	94.38	191.89
Total Tanzania (TANESCO) Energy Export / (GWh)	61.23	77.18	79.17	93.37	81.12
Total SNEL (DRC) Energy Export (GWh)	2.25	2.19	2.48	2.24	2.49
Total REG (Rwanda) Energy Export (GWh)	1.94	2.42	9.28	8.33	7.55
Eskom Hydro Energy (GWh) sent to UETCL	1,285.62	1,429.74	1527.35	1512.8	1322.67
Bujagali Hydro Energy (GWh) sent to UETCL	1,456.61	1,537.33	1,655.44	1,643.78	1464.45
Isimba Hydro Energy (GWh) sent to UETCL				0.89	718.80
Total Thermal Generation (Diesel &HFO) (GWh)	73.43	66.26	231.19	198.88	102.29
Total Co – Generation (GWh)	172.29	177.58	149.79	206.46	196.78
Total Minihydro Generation (GWh)			264.39	442.34	479.82

Total Solar (GWh)			23.03	32.32	78.19
Domestic Energy Consumption- Constrained GWh) ¹	3,209.97	3,370.35	3547.05	3,843.31	4,079.40
Domestic Energy Consumption –Unconstrained (GWh) ²	3,211.58	3,371.39	3,548.09	3,846.32	4,080.81
Peak time Maximum scheduled load shedding (MW)	0	0	0	0	0
Energy not supplied due to unscheduled Load Shedding (GWh)	1.610	1.036	1.04	3.1	1.402
UETCL Transmission Losses Annual Average (%)	3.37	3.90	3.79	3.76	3.72
Average Annual System Load Factor	0.73	0.71	0.75	0.72	0.74
Average Annual Uganda Load Factor	0.72	0.74	0.75	0.75	0.78
Kenya Maximum Export (MW)	61.0	55.4	70.9	74.0	95.4
Tanzania Maximum Demand	13.5	17.4	18.1	19.47	18.4

Achievements as Single Buyer in FY 2019/20

The performance in executing the responsibilities under the single buyer license is presented below. The data presented is as at December 2019.

UETCL Energy Purchases

A total of 4,333.42GWh of electricity were purchased by UETCL in 2019 from various sellers compared to the 4089.59GWh that were purchased in 2018, an increase of 5.96% between 2018 and 2019.

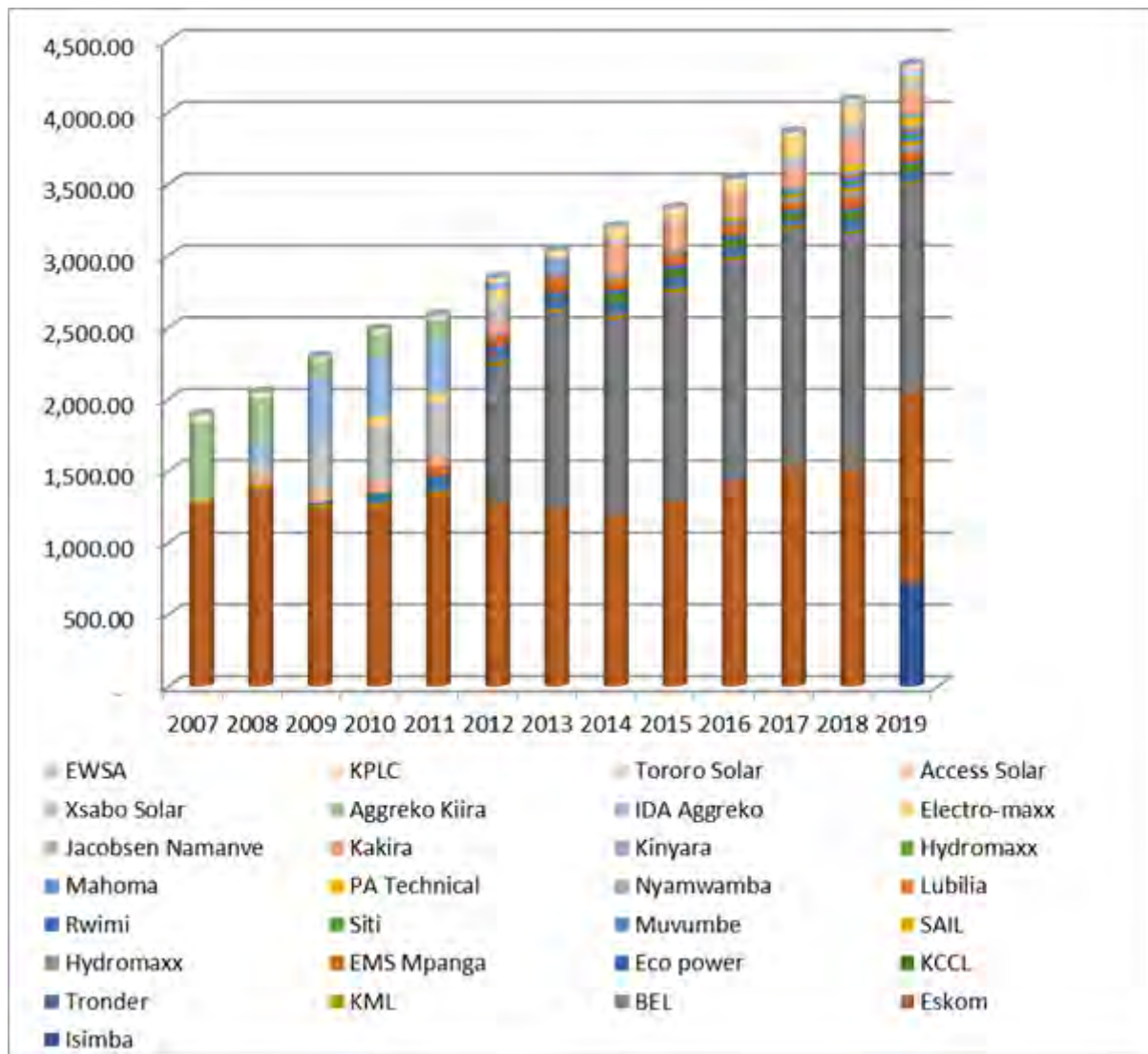
¹ Excluding load shedding

² Includes load shedding

Table 12: UETCL Energy Purchases ending 2019

Category	Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Large Hydro	Isimba	-	-	-	-	-	-	-	-	-	-	-	0.89	718.8	
	Eskom	1,263.5	1,373.5	1,235.0	1,254.8	1,335.9	1,274.4	1,239.9	1,195.5	1,289	1,429.7	1,528.8	1,512.8	1322.67	
	BEL	-	-	-	-	-	966.10	1,375.6	1,366.1	1,456.7	1,537.3	1,655	1,643.8	1464.45	
Mini Hydros	KML	30.10	29.80	28.30	22.30	22.90	22.70	15.70	23.20	24.70	25.80	25.62	14.72	11.86	
	Tronder	-	-	15.90	66.40	80.90	77.60	67.80	87.10	77.20	65.80	32.17	77.90	67.11	
	KCCL	0.90	1.20	1.30	3.40	3.70	4.60	17.60	65.00	61.80	56.80	59.46	59.81	55.96	
	Eco power	-	-	-	-	22.40	25.10	29.10	22.80	24.10	25.20	16.44	20.99	14.41	
	EMS Mpanga	-	-	-	-	66.40	78.80	101.20	81.80	76.70	71.99	54.78	79.13	66.69	
	Hydromaxx	-	-	-	-	-	-	18.30	27.50	30.80	34.50	41.24	37.05	46.65	
	SAIL	-	-	-	-	-	-	-	-	1.10	20.81	15.92	25.59	27.65	
	Muvumbe	-	-	-	-	-	-	-	-	-	-	-	16.03	28.12	28.84
	Siti	-	-	-	-	-	-	-	-	-	-	-	11.43	19.69	20.05
	Siti 2													2.16	
	Rwimi	-	-	-	-	-	-	-	-	-	-	-	6.91	28.84	25.07
	Lubilia													15.09	15.81
	Nyamwamba													30.45	29.59
	PA Technical													39.19	42.75
	Mahoma													3.53	9.64
	Hydromaxx													1.09	12.95
	Butama Hydro														9.58
	Ndugutu														4.84
	Emerging Power														14.18
Kyambura														15.88	
Co-generation	Kinyara	-	-	4.40	4.80	2.30	8.80	116.40	10.30	9.00	7.92	7.77	5.70	7.48	
	Kakira	2.30	57.50	88.40	80.30	57.90	85.30	9.00	203.20	162.30	148.80	126.08	175.16	161.65	
Thermal	Jacobsen Namanve	-	117.20	361.90	372.60	391.20	148.70	1.40	35.70	12.30	4.72	86.82	110.32	68.77	
	Electro-maxx	-	-	0.30	82.60	69.90	67.70	0.40	52.40	61.10	61.55	144.37	88.49	30.15	
	IDA Aggreko	-	117.00	408.10	417.80	363.80	56.60	-	-	-	-	-	-	-	
	Aggreko Kiira	539.40	311.00	126.40	151.10	133.00	-	-	-	-	-	-	-	-	
Xsabo Solar													0.28	32.02	
Solar	Access Solar	-	-	-	-	-	-	-	-	-	3.72	16.47	16.26	15.91	
	Tororo Solar	-	-	-	-	-	-	-	-	-	-	6.60	15.75	16.02	
Imports	KPLC	58.30	40.90	25.10	29.20	35.80	30.20	42.90	29.00	44.70	36.96	9.56	34.78	16.17	
	EWSA	2.20	2.30	2.60	3.00	2.90	3.20	3.00	3.70	3.80	3.77	3.85	4.19	4.3	
Totals		1,896.70	2,050.40	2,297.70	2,488.30	2,589.00	2,849.80	3,038.30	3,203.30	3,335.30	3,535.34	3,865.37	4,089.59	4,380.06	

Figure 1: UETCL Energy Purchases ending 2019



UETCL Energy Sales

UETCL sells power to the following domestic companies; Umeme Ltd, Pader Abim Co-operative Society, Kilembe Investments Ltd, Bundibugyo Co-op Society, Kyegegwa Rural Electricity Co-op Society and Uganda Electricity Distribution Company Limited (UEDCL) as well as exports power to Kenya Power and Lighting Company (KPLC), Tanzania Electricity Supply Company Limited (TANESCO), Energy Water and Sanitation Authority (EWSA, Rwanda) and Societe Nationale D’Electricite (SNEL, Congo).

A total of 4,224 GWh of electricity were sold by UETCL in 2019 compared to the 3930 GWh that were sold in 2018. This represents a 7.5% increase in energy sales by UETCL from 2018 to 2019.

Below is an analysis of the power sales by UETCL to various distributors as well as export to neighbouring countries.

Table 13: UETCL Energy Sales ending 2019

Domestic Sales								Export				
Year	Umeme	Ferdsult	Bundibugyo Co-op Society	Kilembe Investment Ltd	Pader Abim Co-op Society	KRECS	UEDCL	KPLC	TANESCO	EWSA RWANDA	SNEL	Total
2010	2,323.84	9.09	0.82	1.66	0.54			29.24	45.36	1.97	0.14	2,412.66
2011	2,395.50	47.9	1.1	4.8	0.98			38.2	50.94	3.13	1.6	2,544.15
2012	2613.78	16.1	1.4	6.1	1.2			37.9	57.1	1.8	2.4	2,737.78
2013	2,799.77	19.77	1.74	2.66	1.46		2.08	47.41	54.44	1.4	2.11	2,932.84
2014	2,894.58	22.98	1.88	3.72	1.61	1.29	5.12	107.06	55.65	2.59	2.44	3,098.92
2015	3,051.14	26.13	2.33	4.58	2.13	2.07	8.65	56.03	61.23	1.94	2.25	3,218.48
2016	3,180.67	30.43	2.91	4.86	2.26	2.64	11.22	83.214	77.18	2.42	2.19	3,399.99
2017	3,333.62	4.89	2.93	5.63	2.15	3.48	46.16	225.88	79.17	9.28	2.3	3,715.49
2018	3,612.75	0	3.09	6.41	2.35	4.15	68.13	129.17	93.37	8.33	2.24	3,929.99
2019	3824.47		5.08	6.8	2.52	4.44	81.69	208.06	81.12	7.55	2.49	4,224.22

Note:

KRECS: Kyegegwa Rural Electricity Cooperative Society

KPLC: Kenya Power and Lighting Company

TANESCO: Tanzania Electricity Supply Company

UEDCL: Uganda Electricity Distribution Company Limited

SNEL: Societe Nationale D'Electricite

EWSA: Energy Water and Sanitation Authority



Picture 4: New Fort Portal Substation



Picture 5: New Fort Portal Substation Control room



Picture 6: New Nkenda Substation



Picture 7: Karuma Switchyard precommissioning tests

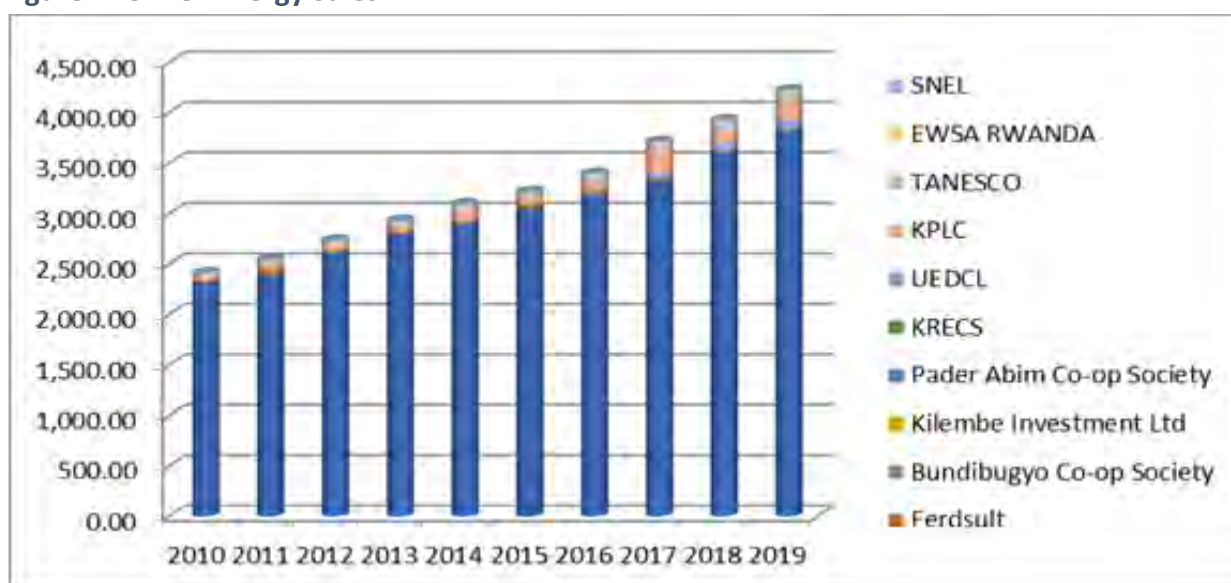


Picture 8: New Queensway Substation



Picture 9: Isimba HPP Switchyard

Figure 2: UETCL Energy Sales



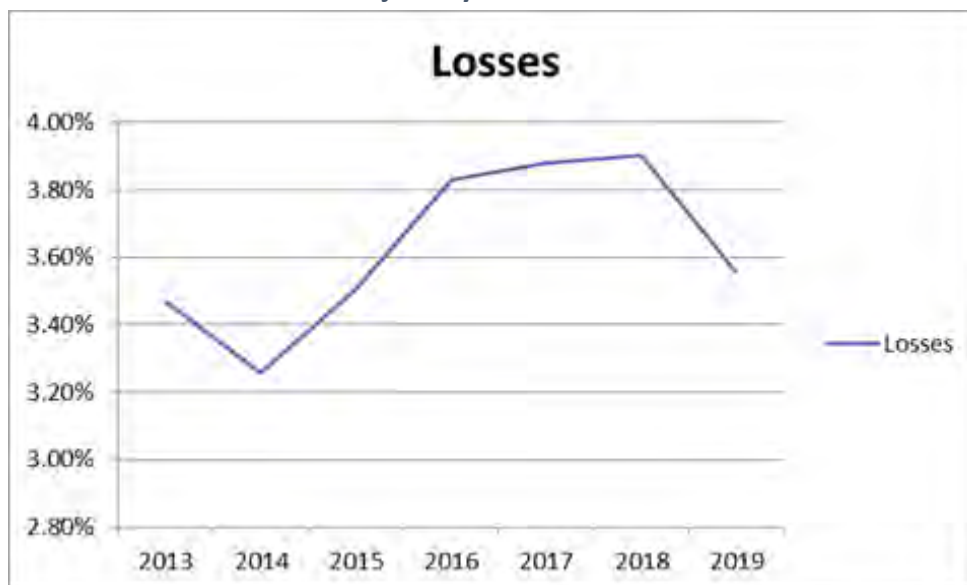
Transmission Loss trend 2012-2019.

The power system has undergone several changes in the recent past which include load growth, commissioning of new generation plants, as well as new power lines and transformation capacity addition. Depending on the various variables including the infrastructure development, the seasonality of the hydro power plants, the voltage control mechanisms etc. the transmission grid registers energy losses which is the difference between energy purchased and energy sold.

Table 14: Time Series of UETCL System Losses

Year	Purchases	Sales	Losses
2012	2,849.80	2,737.78	3.93%
2013	3,038.36	2,932.85	3.47%
2014	3,203.13	3,098.92	3.25%
2015	3,335.16	3,218.48	3.50%
2016	3,535.40	3,399.98	3.83%
2017	3,864.91	3,718.25	3.79%
2018	4,089.59	3,930	3.64%
2019	4,380.06	4,224.22	3.56%

Figure 3: UETCL Transmission Loss Trajectory



3.4.3 Challenges to performance and measures undertaken to remedy

- i. Acquisition of way leaves for construction of transmission lines has proved to be horrendous. It has increased project costs by very high margins and in some cases led to delay in project implementation.
- ii. Securing funding for new investments
- iii. Change of scope of projects due to the dynamism of the energy sector. This has both time and cost impact on the projects.
- iv. Rampant vandalism which is a threat to the integrity of the transmission infrastructure and increases significantly the Operations and Maintenance (O&M) budget of UETCL.
- v. Procurement procedures that delay purchase of goods and services slowing down decision making and implementation.
- vi. Inadequate staff to supervise the projects under implementation.
- vii. Depreciation of the Uganda Shilling against foreign currencies which impacts on power purchases prices which are made in foreign hard currencies

3.4.4 Proposed strategies/measures to address challenges

- i. Engage Government to revise the land law to enable quicker acquisition of wayleaves
- ii. Engage Government to avail more funds for infrastructure development in a timely manner.
- iii. Streamline procurement processes to achieve greater efficiency.

3.4.5 Plans and strategies for FY2021/22

Completion of the following projects

- i. 248km, 400kV Karuma-Kawanda; 54.2km, 400kV Karuma – Olwiyo; 75.5km 132kV Karuma-Lira transmission lines and associated 2X650MVA 400/132kV Karuma substation, 2X20MVA 132/33kV Karuma substation, 2X650MVA 400/132kV Kawanda substation, 2X20MVA 132/33kV Olwiyo substation.

- ii. 23.5km, 132kV Mutundwe-Entebbe transmission line and associated 2X60/80MVA 132/33kV Entebbe substation.
- iii. Opuyo substation upgrade to 2x32/40MVA
- iv. 160km, 132kV Opuyo – Moroto transmission line and associated 2X32/40MVA 132/33kV Moroto substation.
- v. 127km 220kV Bujagali-Tororo transmission line and associated substation works.
- vi. 132kV Industrial Parks transmission lines (6km Namanve-Namanve South, 15km Namanve South-Luzira) and associated 3X32/40MVA 132/33kV Luzira substation, 3X40/63MVA 132/33kV Namanve substation
- vii. 260 km, 132kV Tororo – Opuyo –Lira
- viii. 2x80/80MVA 132/33kV Sukulu substation
- ix. Kampala North substation upgrade by 1x32/40MVA power transformer
- x. Tororo substation upgrade by 1x80MVA power transformer

Continue construction of the following projects

- i. 80%- 44km, 132kV T-Matugga – Kasana transmission line and associated 1X15/20MVA 132/33kV Kasana substation.
- ii. 80% 132kV, 83km Gulu-Agago
- iii. 80% 132kV, 294km Kole – Gulu – Nebbi – Arua
- iv. 80% 132kV, 88km Mirama – Kabale
- v. 20% - Electrification of Industrial Parks and Free Trade Zones (Category 1 - Kapeeka, Sukulu, Mbale Industrial substations) *
- vi. 10%- Nkenda substation upgrade by 1x80MVA power transformer
- vii. 10%- 132kV reactors at Hoima and Fort Portal

Procurement of Supervision Consultant and/or EPC Contractor for the following projects:

- i. 400kV,130km Masaka – Mbarara (EPC Contractor)
- ii. Kampala Metropolitan Transmission Project (EPC Contractor)
- iii. 132kv, 37.3km Mirama – Kikagati – Nsongezi (Supervision Consultant and EPC Contractor)
- iv. 220kV, 92km Hoima – Kafu (Supervision Consultant and EPC Contractor)
- v. Upgrade of Tororo, Mbarara, and Mirama 220/132kV substations (Supervision Consultant and EPC Contractor)
- vi. 132kV Bulambuli – Mbale (Supervision Consultant)
- vii. Electrification of Industrial Parks and Free Trade Zones (Category II - Wobulenzi, Nakasongola, Kaweweeta & Associated Transmission Lines) (Supervision Consultant)
- viii. 400kV Uganda-South Sudan transmission line (Olwiyo – Elegu Border) (Supervision Consultant and EPC Contractor)

Feasibility studies:

- i. ESIA/RAP 132kV Bulambuli - Mbale transmission line
- ii. Feasibility study for 400kV Uganda-South Sudan transmission line

- iii. ESIA/RPF studies for 400kV Uganda-Tanzania Interconnection project – Uganda Part
- iv. Feasibility study for 400kV Uganda-Tanzania Interconnection project
- v. Grid Strengthening and Electrification of Industrial Parks Phase III (Upgrade of Nkenda – Fortportal – Hoima transmission line to 220kV and associated substation works at Nkenda, Fort Portal, Lyanda and Hoima; Kabaale industrial park, Jinja industrial park, Ishaka Industrial Park, Kasese Industrial park, Masese substation and Njeru substation. Industrial Parks (Rakai, Mubende, Ishaka, Jinja) & Substation Upgrades (Nkonge & Kole)³
- vi. Feasibility study for 400kV Uganda-DRC Transmission line

3.5 Power Distribution - UEDCL

The Uganda Electricity Distribution Company Ltd (UEDCL) is a statutory body created by the Electricity Act 1999 to manage the Electricity Distribution Network in the country.

In the FY2019/20, the Company raised its revenue by UGX 36Bn and grew its customers by 16.5% as detailed below.

3.5.1 Implementation Status of UEDCL Undertakings for FY2019/20

Table 15: Implementation Status of UEDCL Undertakings for FY2019/20

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
Construct a concrete utility pole plant	Approved architectural and structural designs, EIA report. Utilities (electricity and water) extended to site (underground water pumping station complete)	Financing remains a challenge	Soliciting for financing from prospective lenders and preliminary discussions have been held with UDB.
Construct CCA pole treatment plant	Approved architectural and structural designs, EIA report.	Financing remains a challenge	Soliciting for financing from prospective lenders and preliminary discussions have been held with UDB.
Increase customer base in UEDCL operated	Customer base was increased to 78,835 from	Inadequate supply of Connection materials under ECP	<ul style="list-style-type: none"> • Continually engaging REA to fast track

³ Subject to reaching financial closure

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
territories to 100,000	67,678; thus, an increase of 11,157 new connections during the period.		<p>procurements</p> <ul style="list-style-type: none"> Advocate for portion of EPC funds for connection materials to be routed through DISCOs to enable in-house procurement
Loss reduction in UEDCL operated territories to 20%	Actual loss target of 23.8% was achieved. This was within the ERA approved loss target of 25.6% (including wheeling charges)	However, UEDCL suffered additional energy loss due to evacuation of power from minihydro plants located at Nkusi and Waki near Lake Albert, Siti in Kween District, and Ishasha in Kanungu to a tune of 25% loss which is imposed due lack of a transmission network in those places to transmit power to the grid.	UETCL is urged to extend transmission networks towards IPP sites to transmit generated power at High Voltage which will lead to lowering technical losses
Automate MV switches for remote monitoring and control	Not achieved in the period	Procurement process was delayed by Covid-19 lockdown. Even when bids were finally received, response was low and we failed to get a service provider.	UEDCL is fast tracking procurement of the SCADA in 2020/2021 financial year
Improvement of Network availability to 98%	Availability stood at 93%	<ul style="list-style-type: none"> Manually operated switches due to lack of SCADA. Poor network configuration 	<ul style="list-style-type: none"> UEDCL is fast tracking procurement of the SCADA in 2020/2021 financial year Package project aimed at network reconfiguration to improve

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
Complete capture of UMEME Network assets in GIS data capture	Achieved 100% covering MV and LV Level Assets as of June 2020 in the GIS server.	<ul style="list-style-type: none"> • Lack of timely notifications on asset additions not classified under ERA approved investments are difficult to identify and capture. E.g DOMC, Commercial Schemes etc. • Constraints on adequate Manpower and transport to effectively cover 100% of the concessioned Network asset. • Lack of information on decommissioned and removed assets from the concessioners. • Concessioners non-compliance to asset data sharing provisions of the LAA. 	<p>availability, and submit for funding</p> <ul style="list-style-type: none"> • New GIS staff being recruited to boost current staffing. • We are in discussions with the concessionaires on better working frameworks to ease access and provision of near real-time information on Network asset additions, removals and disposals.
Improve quality of supply through voltage profile improvement through installation of capacitor banks along MV lines with low voltage profiles	Not achieved. Later, it was considered that Acwa generation would improve the voltages. The Capacitor bank was installed along with Acwa evacuation solution.	Unfortunately, the impact of the banks is only substantial when the dam is operational	The solution lies with the implementation of the UETCL planned transmission line

3.5.2 Other key sector achievements in FY 2019/20

Completed part of Interim option to Evacuate 12MW of the 42MW from Acwa II HPP as follows:

- i. Completed construction and installation at Acwa II 33kV/11kV substation
- ii. Completed installation of 5MVAR capacitor bank at Gulu substation and 2MVAR at Kitgum substation to boost voltages in the area.
- iii. 37km of 33KV double circuit line from Acwa Substation to Angagura and from Laria to Gulu 33kV/11kV substation hence creating evacuation route from Acwa to existing infrastructure.
- iv. Rehabilitation of Lira-Gulu 33Kvand Lira-Kitgum was progressed to 50% while Rehabilitation of Acholibur –Laria 33kVline was progressed to 90%.

UEDCL Territory Business Statistics

Table 16: UEDCL Territory Business Statistics from Dec 2014 – June 2020.

Period	Dec-14	Dec-15	Dec-16	Jun-17	Jun-18	Jun-19	Jun-20
Energy - Unit purchased (MWh)	5,125	8,564	11,559	17,079	53,948	73,482	90,875
Energy - Units sold (MWh)	4,324	7,471	8,991	12,237	38,178	48,812	51,876
Energy losses - Evacuation losses inclusive	15.6%	12.8%	22.2%	28.4%	29.2%	33.6%	43%
Energy losses attributed to Mini Hydro power evacuation					1%	13%	19%
Energy losses net of Evacuation losses	15.6%	12.8%	22.2%	28.4%	28%	20.3%	23.8%
Revenues (UGX Bn)	2	4	6	7	27	36.9	38.4
Customer Numbers	5,640	9,526	14,114	42,706	53,212	67,678	78,835

From Table 17 above, there has been tremendous improvement in UEDCL's Territory performance in the parameters of customer numbers growth, Energy purchases, energy sales and revenue. The areas of operation have also expanded with increased network coverage. The itemized parameters are discussed below.

Customer Numbers

The year offered another opportunity for continued growth in customer numbers. Efforts were made to drive the numbers, but were swatted by the Covid pandemic which limited the overall Company operations for the whole second half of the financial year. The pandemic outbreak only worsened the situation that was already marred with shortages in connection materials (due to delayed procurements in REA). The two factors were critical bottlenecks that denied UEDCL achieving the connection targets.

However, a total of 11,157 customers were connected during the period. The total customer

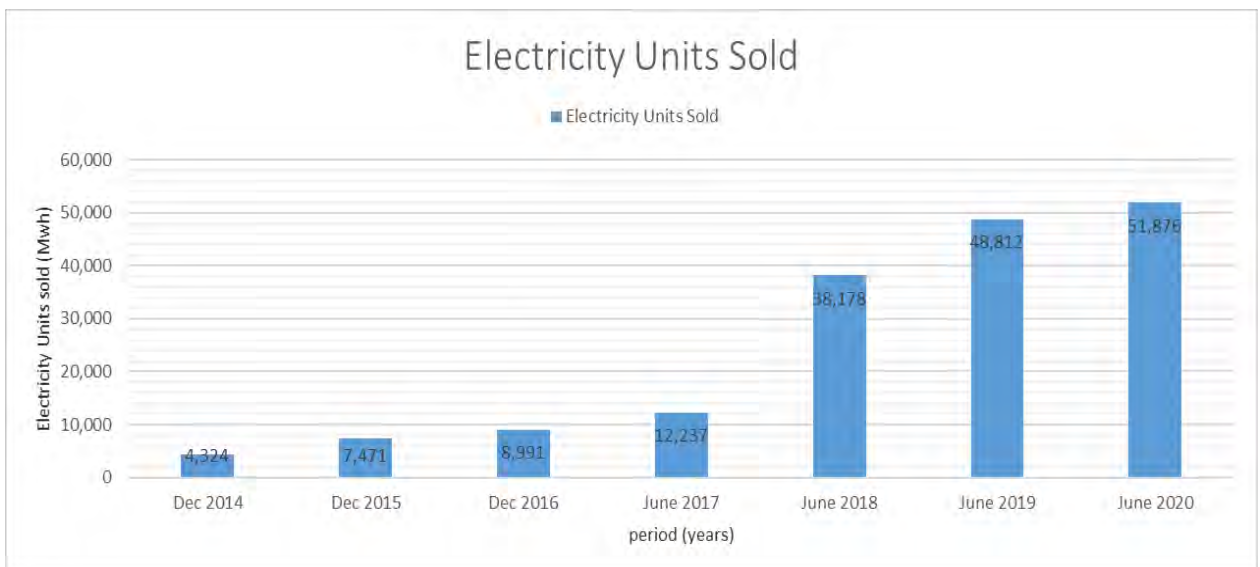


base grew from 67,678 to 78,835 customers, as at June 30, 2020 (16.5% customer growth).

Energy units sold

The financial year registered a mere 6% increase in units consumed (compared to 2018/19). This was despite the fact that the number of customers increased by 16.5%. It is important to note that there is little proportionality between number of connected customers and the energy units consumed when the customers are predominantly domestic category. There is need for initiatives that will increase the number of commercial and industrial customers in order to increase the much-desired proportionality. Below is the graphical representation of the cumulative growth in energy consumption over the last seven years.

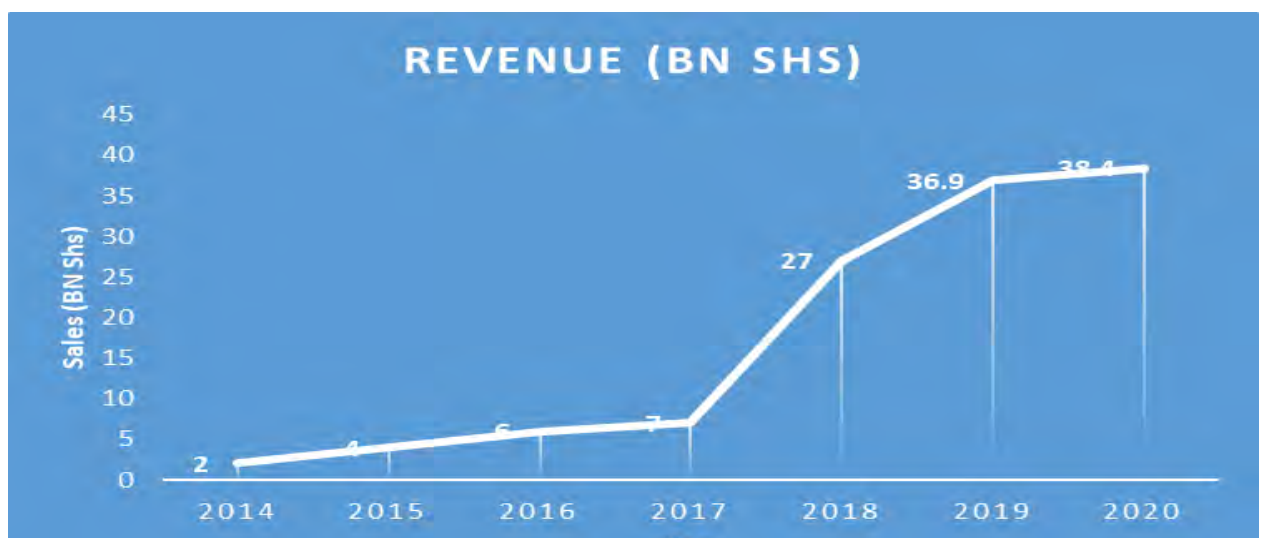
Figure 5: UEDCL Energy Units sold during the last seven years



Territory Revenue

The revenues for the company from the sale of electricity within its operational territories have increased from US\$2.4billion to US\$38.4billion for the year end June 2019/2020. The growth in number of customers and number of energy units sold has translated into a corresponding growth in energy revenues over the period 2014 to 2020.

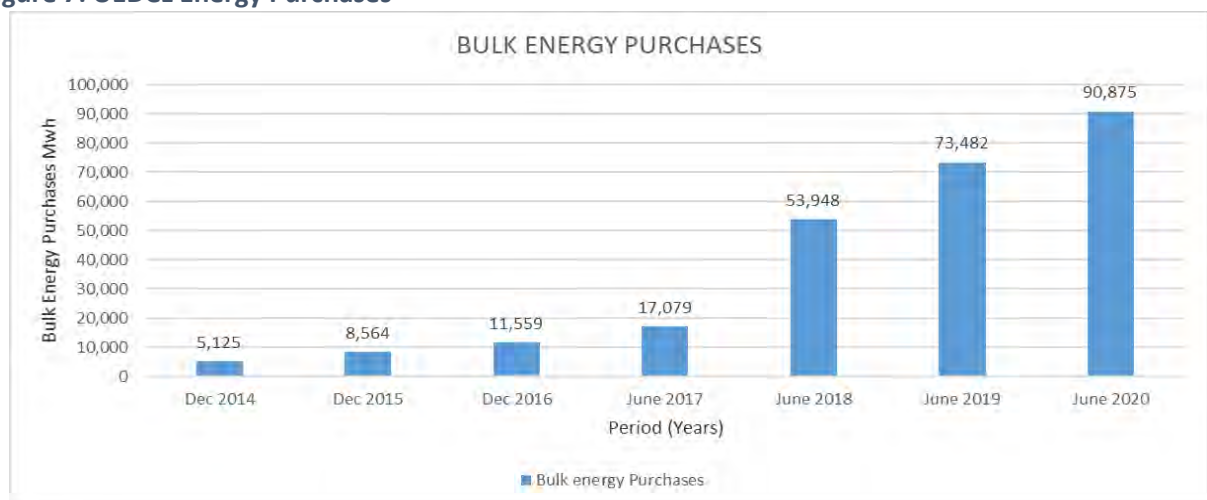
Figure 6: UEDCL Revenues for the last 6 Years



Bulk Energy Purchases

UEDCL's energy purchases have been on the rise over the years although the biggest jump is registered in 2018 following the takeover of former Ferdsult operations. In addition, there has been an increase in the number of customers on to the national grid. Accordingly, the UEDCL demand forecast for electricity purchases from UETCL is projected to reach 90,875 Mwh by June 2020.

Figure 7: UEDCL Energy Purchases

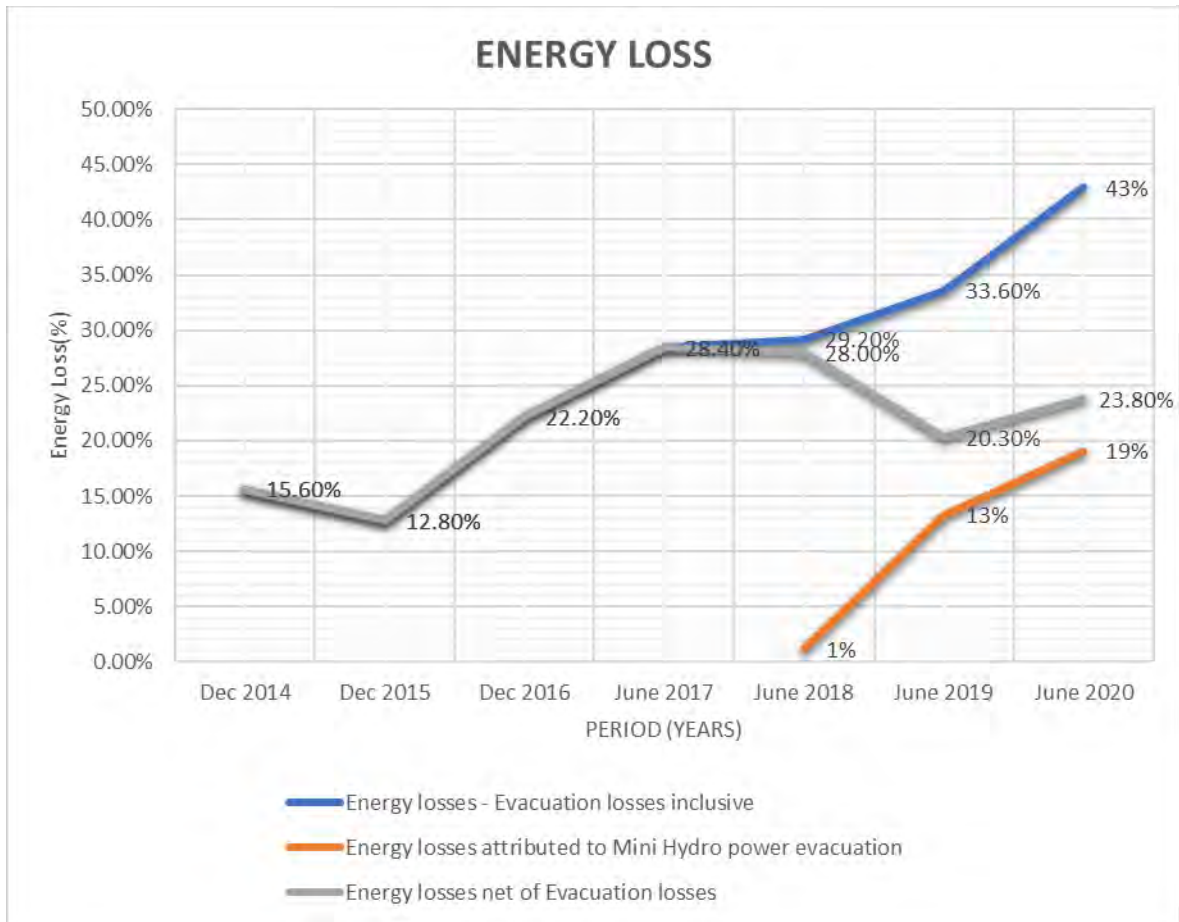


Energy loss performance

UEDCL has continued to improve on energy loss performance as shown above. Until 2017, there were no evacuation losses. These came into existence following the need from MEMD and ERA to intervene and evacuate electricity from Mini hydro Power Stations of Nkuusi, Achwa II and Siti. The energy loss appears to worsened as compared to the previous year, but this is attributed to the evacuation losses.

Upon completion of Evacuation lines by UETCL, the evacuation losses will be taken over by transmission and UEDCL will remain on track to achieve a single digit distribution loss.

Figure 8: UEDCL Energy Losses



3.5.3 Challenges to performance and measures undertaken to remedy

Table 17: Challenges to UEDCL performance and measures undertaken to remedy

Challenges to performance	Strategies to address challenges
<p>Limited financing: UEDCL is a regulated distribution entity that receives only Distribution operational and maintenance costs from the tariff approved by ERA.</p> <p>The approved tariff avails the funds at the end of the tariff year and this creates a cash flow timing difference.</p>	<p>ERA should allow in its tariff model an interest rate to the investors who invest in UEDCL so as to attract funding for investments. It is these investors that provide working capital as we collect monthly revenues through the tariff for running the operations of the Company</p>
<p>UEDCL operates lines constructed by REA. No additional funds are received from REA (Gov't) to refurbish the network. ERA gives funds to maintain/service. This creates a heavy burden to UEDCL as it struggles to provide quality service with no capital budget but using maintenance budget.</p>	<p>MEMD and MoFPED should prioritize investments into the distribution sector to refurbish the ever-aging distribution network.</p>
<p>ERA approves a budget to be funded by the tariff if UEDCL achieves the target. This means that if UEDCL does not meet the target (customer Nos, Reliability and Losses), it has no money to run the utility business. The challenge is UEDCL relies heavily on REA for connection materials to be able to connect new customers. In the recent past, REA has had numerous delays in procurement of materials for the whole distribution sector. This has affected the performance of UEDCL to connect customers and also to raise the revenues for implementation of approved budget.</p>	<p>UEDCL should be considered as a Government Entity to manage its supply chain management so that it is able to take responsibility for the ERA set target of connecting customers to raise the budget. The current model leaves UEDCL with an approved budget and yet the tools (connection materials) to raise the revenues to implement the budget are with another entity (REA).</p>
<p>UEDCL operates a pole plant inherited from the UEB days. The pole plant has been aging graceful but like any other machine, it has a limit. That limit has been reached and we are now stretching it. The challenge is that US\$ 38 billion shillings which UEDCL had raised through the use of this plant was borrowed by MoFPED to pay off debtors of former UEB pensions in 2012. These funds would have been enough to put up a new plant in a spacious place with</p>	<p>MoFPED could refund US\$ 38 Billion to UEDCL so as to save the Pole plant from extinction.</p>

modern equipment.	
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3.5.4 UEDCL Plans and strategies for FY2021/22

Strategy	Undertakings	Measure	Indicator
Increasing access and connections	<ul style="list-style-type: none"> • Network densification by injecting transformers along the existing MV Lines and constructing associated LV distribution networks. • Enhancing Connection of new customers 	<ul style="list-style-type: none"> • No of transformer Injections • No of customer connections 	<ul style="list-style-type: none"> • 300 transformers and 240 km of LV distribution lines • 50,000 new connections
Improve efficiency in electricity supply utilization	Reduce energy losses on the distribution networks operated by UEDCL	Percentage of losses in the distribution network	19%
Strengthening and improving on the integrity of the distribution infrastructure	<ul style="list-style-type: none"> • Complete the system Automation. Full scale SCADA operation • Carryout systems improvements on the distribution network • Enhance network protection capabilities 	<ul style="list-style-type: none"> • Percentage of the distribution network operated under SCADA. • The average distance controlled by each protection switch (LBS, ABS and Auto-reclosures) on the network 	<ul style="list-style-type: none"> • Full system (100%) automation by April 2022 • 50 km per switch

Strategy	Undertakings	Measure	Indicator
Attainment of customer service excellence	<ul style="list-style-type: none"> Enhance the capabilities of the call center to effectively interface with customers. Develop (through R&D) an in-house SMS, gateway integration system to avoid dependency on third party. Redevelop the Company performance management system with to cater for aspects of customer service 	<ul style="list-style-type: none"> % age increase in the calls taken per hour Presence of a full functional system A well-developed performance management system 	<ul style="list-style-type: none"> 200 calls per hour Commissioned by July 2021 A commissioned system by August 2021
Increased visibility through effective and continuous communication of the Company's achievement of milestones	<ul style="list-style-type: none"> Develop the UEDCL communication strategy Develop a stakeholder awareness and advocacy strategy Carry out organizational rebranding in line with the five-year strategic plan 	<ul style="list-style-type: none"> Increased awareness and visibility within the public and among stakeholders Increased confidence form stakeholders 	Approved communication and stakeholder's awareness strategies by August 2021
Establishment of the modern utility pole plants	<ul style="list-style-type: none"> Solicit for financing, Solicit for the contractors for 	The percentage of UEDCL pole production that is performed from Kyampisi	50% of the total UEDCL pole production

Strategy	Undertakings	Measure	Indicator
	supply and installation, <ul style="list-style-type: none"> • Supervise construction and then commission 		
Complete the Enhancement of the national electricity distribution system asset register	Fast track and supervise the consultancy for updating the asset register and ensure all the expected deliverables are achieved	Level of completion of the asset register	A fully updated electricity distribution system asset register that conforms to the standards according to the requirements by ERA
Enhance compliance monitoring of the distribution concessions	<ul style="list-style-type: none"> • Monitoring of the Value-for-money on asset addition and DOMC within the Umeme concessioned assets • Identifying investment areas within the concessioned network • Assessment of the asset performance within the WNERCO area 	<ul style="list-style-type: none"> • Percentage of DOMC verified • The percentage of the WNERCO network inspected 	Quarterly verification reports and remedial actions proposed

3.6 Power Distribution – UMEME

Umeme Limited is incorporated as a limited liability company under the Companies Act, 2012 of Uganda and is licensed by the Electricity Regulatory Authority (ERA) under Licence No.047 and Licence No.048 to carry on the business of electricity distribution and supply under the provisions of the Electricity Act 1999, (Caps 145) of Uganda. The Company took over the system for the distribution and supply of electricity in Uganda from Uganda Electricity Distribution Company Limited (UEDCL) under a concession arrangement for a period of 20 years which commenced on 1st March 2005 and expires on 28th February 2025. Under the

Concession, Umeme is also required to operate, maintain, upgrade, and expand the Distribution System within Uganda.

3.6.1 Implementation Status for UMEME Undertakings for FY 2019/20

Table 18: Implementation Status for UMEME Undertakings for FY 2019/20

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate the challenges
Capex Investments	<ul style="list-style-type: none"> • During the calendar year 2019, Umeme invested Ushs 105 billion in the electricity distribution network. • Asset replacement investments were made to upgrade and install new substations, restore, refurbish and extend LV lines and services, inject new transformers onto the grid, to make new connections and to convert previously postpaid customers to the prepaid metering system. • These investments were targeting growth in demand, which is a national agenda, meeting the previously unserved demand and improvement of electricity supply reliability. • These investments led to an increase in revenue collection in the category of domestic consumers and the industrial customers compared to the year 2018. 	<p>The low voltage network, which Umeme operates, still requires significant improvement.</p> <p>Need for additional approval of Technical Energy Loss Reduction projects.</p> <p>Non-recovery of invested capital due to investment rejections by the Electricity Regulatory Authority.</p>	<p>Continuous prioritization of investment into the network for growth, supply reliability, safety and technical loss reduction.</p> <p>Continuous engagement with the Sector Planning Coordination Committee.</p> <p>Engagement with ERA regarding unapproved investments.</p>
Loss Reduction	<ul style="list-style-type: none"> • During the year 2019, 	<ul style="list-style-type: none"> • The 	<ul style="list-style-type: none"> • Commitment to

	<p>Umeme dedicated resources to loss reduction initiatives including, both Technical Loss Reduction (TLR) and Non-Technical Loss Reduction (NTRL) initiatives.</p> <ul style="list-style-type: none"> • Other initiatives included; meter installation audits, use of technology like smart meters for large customers, billing efficiency and public awareness. • Distribution losses dropped by 0.2% from 16.6% in 2018 to 16.4% at the end of 2019. 	<p>intensification of the GOU Electricity Connections Policy (ECP) towards the end of the year 2018 led to an observed increasing trend of commercial (non-technical) energy losses in the year 2019/2020.</p> <ul style="list-style-type: none"> • Power theft is still prevalent • Public interference with the network including illegal network operations by former staff and others. • Lack of cooperation from several local leaders in the fight against power theft. 	<p>invest in energy loss reduction initiatives including, both Technical Loss Reduction (TLR) and Non-Technical Loss Reduction (NTRL) initiatives.</p> <ul style="list-style-type: none"> • One of the major Umeme initiatives against distribution losses during the year was a campaign called “<i>Kombo</i>” which was adopted to find and eliminate all illegal electricity connections especially in the crowded informal settlements in the urban areas. • Continuation of the refocusing of the commercial loss reduction targeting high loss districts.
<p>Network Expansion and</p>	<p>From 2018 to 2019, Umeme added 1,710 km of distribution</p>	<p>Quality of the wooden poles we</p>	<p>The Electricity Regulatory</p>

<p>Growth</p>	<p>lines (MV and LV) to the network; thus, growing the network size by 5%.</p> <table border="1" data-bbox="454 371 869 555"> <thead> <tr> <th>Total Length</th> <th>2019</th> </tr> </thead> <tbody> <tr> <td>MV Lines (km)</td> <td>14,923</td> </tr> <tr> <td>LV Lines (km)</td> <td>20,933</td> </tr> <tr> <td>Transformers</td> <td>13,142</td> </tr> </tbody> </table> <p>Source: Umeme Electricity Distribution Statistics Database</p> <p>During the same period, Umeme added 619 transformers to the network representing a 5% growth in the transformer population which brought the total number of transformers to 13,142 as at 31st December 2019.</p> <p>In the year 2019, network expansion by Umeme was driven by the need to improve on electricity supply reliability through network refurbishment and increase in capacity in order to meet the growing demand from both new (REA-ECP program) and old customers.</p>	Total Length	2019	MV Lines (km)	14,923	LV Lines (km)	20,933	Transformers	13,142	<p>use for network expansion, rehabilitation and restoration does not give us the guaranteed life cycle due to cracking and other forms of deterioration.</p> <p>The time taken to acquire, and the cost of wayleaves is most times prohibitive and delays our action.</p>	<p>Authority has introduced new regulatory requirements governing wooden poles that suppliers are required to adhere to. Umeme is supportive of this initiative and is committed to implementing it.</p> <p>Umeme has dedicated full time resources to engage communities from the social perspective to manage wayleaves.</p>
Total Length	2019										
MV Lines (km)	14,923										
LV Lines (km)	20,933										
Transformers	13,142										
<p>Safety</p>	<p>Compared to 2018, there was a drop in public fatalities from 39 in the year 2018 to 18 in the year 2019.</p> <p>The causes of fatalities included power theft which also involves vandalism of the network, domestic illegal</p>	<p>Vandalism of distribution infrastructure is still prevalent.</p> <p>Public interference with the network especially for domestic and</p>	<p>Continuous and increased efforts/campaigns to increase public awareness on the dangers of electricity.</p> <p>We continuously</p>								

	<p>electricity connections, which causes death inside poorly wired houses, contact with the low voltage network, and fatal accidents involving personnel who are contracted to maintain the distribution network on behalf of Umeme.</p>	<p>commercial customers who have been waiting for electricity connection for long due to challenges with the ECP program.</p>	<p>enhance our strict safety rules/protocols for all our staff.</p>						
	<table border="1"> <tr> <td data-bbox="438 548 874 638">Cause of Fatality</td> </tr> <tr> <td data-bbox="438 638 874 683">Power Theft</td> </tr> <tr> <td data-bbox="438 683 874 728">Domestic Electrics</td> </tr> <tr> <td data-bbox="438 728 874 772">Network Contact</td> </tr> <tr> <td data-bbox="438 772 874 817">Fatal Accidents - Contractors</td> </tr> <tr> <td data-bbox="438 817 874 869">Total Fatalities in the year 2019</td> </tr> </table>	Cause of Fatality	Power Theft	Domestic Electrics	Network Contact	Fatal Accidents - Contractors	Total Fatalities in the year 2019	<p>Power theft remains a challenge.</p>	<p>Umeme is working with GoU to address ECP delays in order to mitigate self-connections by customers.</p>
Cause of Fatality									
Power Theft									
Domestic Electrics									
Network Contact									
Fatal Accidents - Contractors									
Total Fatalities in the year 2019									
<p>Source: <i>Umeme Safety Report, 2019</i></p> <p>During FY 2019/20, Umeme met all the requirements of NEMA under the license from ERA especially in the area of elimination of Poly-Chlorinated Biphenyl (PCB) positive transformers and the carrying out of environmental and social impact assessments (ESIAs) before carrying out projects.</p>		<p>Construction under distribution lines particularly in crowded urban areas.</p>	<p>Umeme has dedicated resources towards sensitisation of communities and political leaders to fight power theft and vandalism.</p> <p>Umeme engages the local councils in charge of issuing building permits to reject any application under our infrastructure.</p>						

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate the challenges
Deployment of ICT Systems (SAP & HRIS)	<p>Umeme intensified the implementation of information, communication and technology (ICT) across the business in order to simplify business processes, become more efficient and to deliver results to customers and all stakeholders under the license.</p> <p>Phase I of the deployment of our enterprise resource planning (ERP) Systems Applications and Processes (SAP-Hana) was completed and deployment of phase II commenced.</p> <p>Other significant initiatives to digitize our business that have made significant progress during the FY 2019/20 include;</p> <ul style="list-style-type: none"> ▪ Procurement of a Geospatial Network Information System (GNIS) aimed at mapping the distribution network assets to customers has commenced. ▪ Upgrade of the vending system to meet the growing number of prepaid customers in order to eliminate system failure is about to commence procurement. ▪ Electronic Document Management project aimed at digitizing historical, current and future Umeme has commenced ▪ Online Customer Applications is being piloted to refine it 	<p>Delayed and/or non-approval of system upgrades by the ERA for example the Prepaid Customer Vending System upgrade.</p> <p>Costly upgrades of Umeme IT systems to be able to accommodate new software.</p>	<p>Umeme continues to engage ERA in a timely and consistent fashion in order to get approvals for critical upgrades and new suite software in order to improve our customer service delivery.</p> <p>In order to manage the significant costs of IT, a phased approach to upgrades is used which spreads the overheads over a longer accounting period.</p>

	internally.		
<i>Demand creation and Increasing access to the grid</i>	<p>The Electricity Connections Policy (ECP) is the major initiative adopted by Umeme under Government of Uganda (GoU) to increase electricity connections and consequently create more demand.</p> <p>By the end of FY 2019/20, Umeme had connected 243,000 customers of which 57% (138,895 customers).</p> <p>To enhance demand, the ECP program was coupled with other initiatives introduced by the Electricity Regulatory Authority (ERA) like the energy rebate policy, the declining block tariff for large power users and the reduction in the tariff for the streetlights category. These have led to an increase in demand and a reduction in the amount of energy not served (ENS). Compared to 2018, there was an 8% reduction in ENS in FY 2019/20.</p> <p>Umeme also collaborates with other distribution companies (DisCos) in Uganda by providing access to the network to enable the DisCos interconnect their customers in areas where in order to get electricity. This sharing arrangement is managed under Wheeling Agreements.</p>	<p>Delays by GoU to reimburse Umeme under the ECP program which constrains the achievement of the connections set by ERA.</p> <p>Lack of clarity has also made material planning very difficult which at times may lead to overstocking or material stock outs</p> <p>The challenge with wheeling arrangements is the cost recovery mechanism which at times puts Umeme in a disadvantaged position.</p>	<p>Continuous engagement with REA/GoU to recover all pending amounts due to Umeme.</p> <p>In addition to engagement with government to provide clarity, Umeme is improving its supply chain processes by setting up regional materials stores to avoid the delays caused by having centralized stores.</p> <p>Tripartite agreements are being signed with UETCL and the other DisCos in order to streamline all outstanding issues regarding wheeling.</p>
<i>Service Delivery and Outreach programs</i>	<p>During FY 2019/20, Umeme maintained a 24-hour Contact Centre for both voice and digital communication to serve its</p>	<p>The delay in ECP executions has affected the quality of our customer</p>	<p>Umeme has embarked on a communication strategy which</p>

	<p>customers and the public.</p> <p>The Company maintained two dedicated toll-free lines and eight digital media channels (Twitter, Facebook, WhatsApp, SMS, the Umeme App, Instagram, e-mail and the Umeme website).</p> <p>In order to measure our performance in customer service (service delivery), the net promoter score (NPS) and the customer satisfaction index (CSI) metrics are independently measured periodically.</p> <p>On the technical side, Umeme focusses on keeping the lights on for all customers we serve as an initiative of good customer service delivery.</p> <p>During FY 2019/20, we concentrated on reducing the outage hours, improvement in the restoration times for both our low voltage (LV) and medium voltage (MV) networks and the reduction in maintenance hours.</p>	<p>service as reflected in our Customer Satisfaction Index (CSI) and Net Promoter Score (NPS).</p> <p>Vending challenges due to the need for a system upgrade due to the overwhelming numbers of customers.</p> <p>In the past year 2019/2020, the national electricity grid has suffered more than usual nationwide blackouts which has affected our own customer service delivery being that Umeme is at the end of the electricity process, the call centre has been overwhelmed with calls on service quality and supply interruption.</p>	<p>gives attention to providing clarity on the reason why customers are not being connected in time under the ECP program.</p> <p>Umeme continues to engage with ERA and UEDCL in order to resolve the outstanding issues regarding the vending system upgrade.</p> <p>A joint communication strategy across UETCL and Umeme on the national system blackouts and their causes.</p>
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3.6.2 Other UMEME achievements in FY 2019/2020

Demand Growth

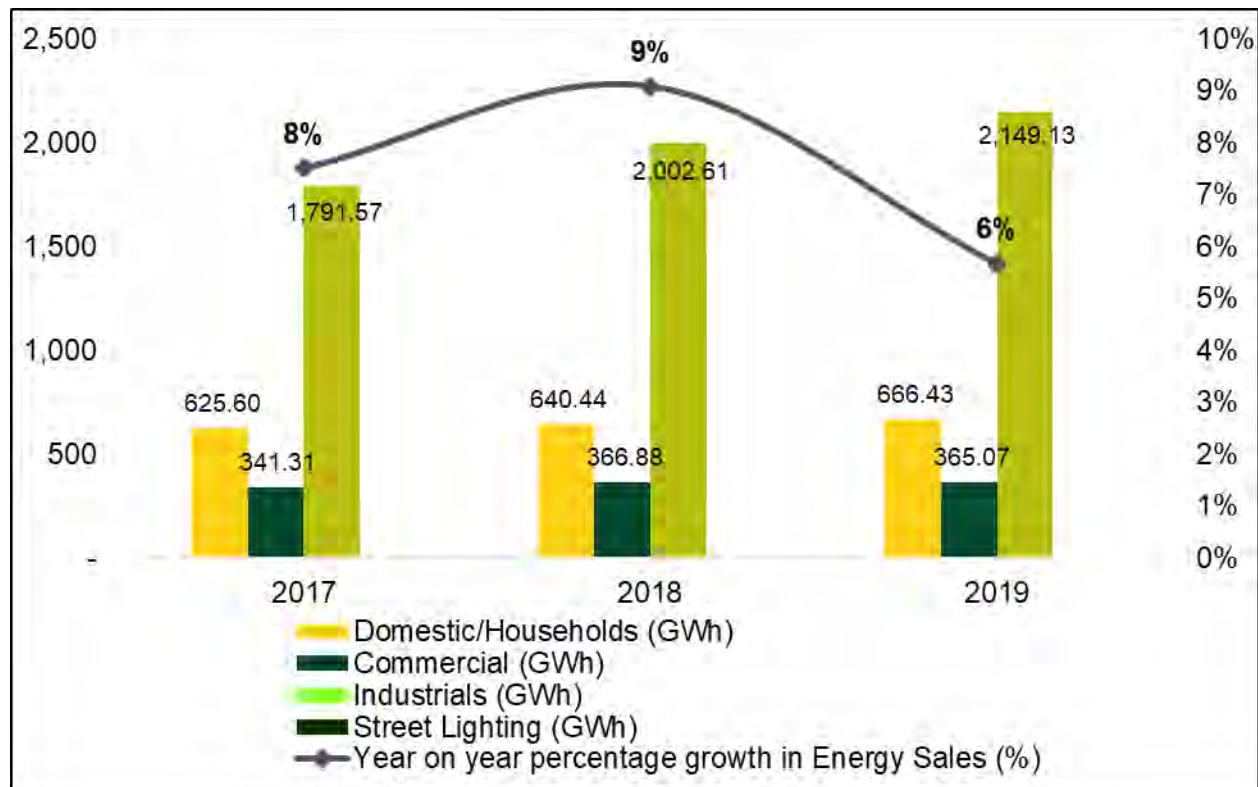
Umeme energy sales are to four main categories of consumers namely; households (domestic consumers), commercial customers (SMEs), industrialists (medium, large and extra-large) and the street lighting category and is explained in the Chart 1 below.

There was an increase in demand through the period under review broken down as follows;

- ✓ 2017 (8%).
- ✓ 2018 (9%).
- ✓ 2019 (6%).

Demand from the industrial and domestic consumers increased steadily through the period mainly attributed to increased capital investments in the distribution network by Umeme including substations, evacuation lines, transformer injections and accelerated growth in domestic connections due to the GoU ECP program.

Figure 9: Figure 9: UMEME Demand Growth from 2017 to 2019



The increase in demand from industrialists was also attributed to; reliability improvements in both the LV and MV network, the dedicated customer service that Umeme provides to this category and the promotion of industrialization through Umeme's electrification of industrial parks which attracted new industries. Umeme also promotes the ERA declining block tariffs to these consumers in order to promote more consumption from them.

Commercial consumer demand increased from 2017 to 2018 and dropped slightly in 2019. Street lighting demand fluctuated between 2017 and 2019.

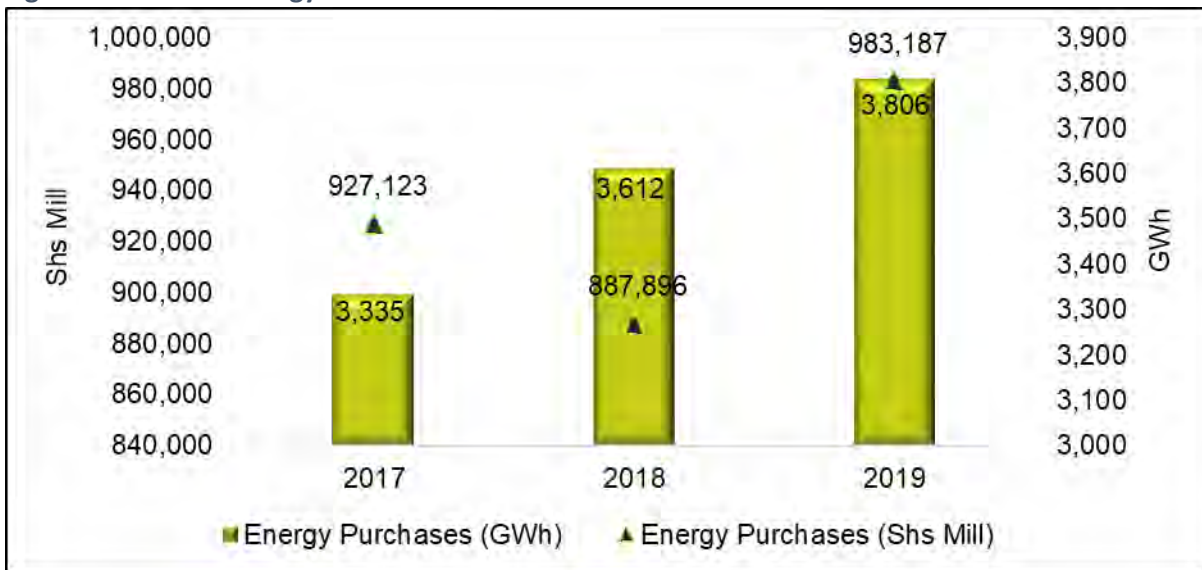
Energy Purchases from UETCL

Umeme purchases all bulk energy from UETCL. Umeme’s energy purchases from UETCL showed an increasing trend from 2017 to 2019 as indicated in the chart below.

Umeme purchased 14% more energy from 2017 (3,334 GWh) to 2019 (3,806 GWh) in order to meet the growing demand for electricity from our customers.

Energy purchase costs increased to Shs 983 billion in 2019 from Shs 927 billion in 2017.

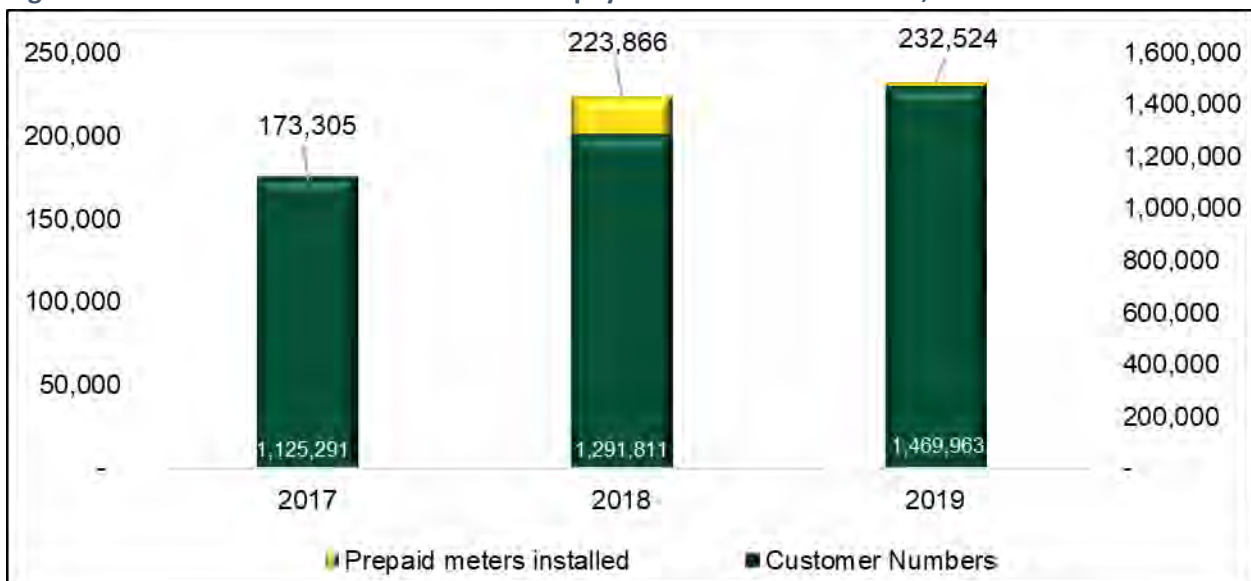
Figure 10: Umeme Energy Purchases from UETCL in GWh from 2017 – 2019



Customer Numbers and Prepaid Meters Installed

Customer growth is directly related to the number of prepaid meters installed since domestic and commercial customer connections have grown significantly in the period under review as shown in Chart 3 below.

Figure 11: Umeme Customer Numbers and Prepayment Meter Connections, 2017-2019



Total customer numbers grew by 31% from 1,125,291 customers in 2017 to 1,469,963 customers in 2019, the year on year growth was 15% from 2017 to 2018 and 14% from 2018 to 2019.

Prepayment metering (conversions plus new connections) grew by 34% from 173,000 meters in 2017 to 232,000 meters in 2019.

There was a significant slowdown in growth in prepayment meters of 6% from 2018 to 2019 because of ECP funding challenges.

Umeme Distribution Energy Losses compared to ERA Target

Umeme reduced energy losses from 17.2% in 2017 to 16.4% in 2019 against a target of 15.9% in 2017 and 15.0% for 2019 respectively as indicated in the chart below:

Figure 12: Distribution Energy Losses: Actual vs Target (2017 – 2020 H1)



While the annual ERA distribution loss targets were not achieved, the actual losses performance was delivered through Umeme’s investment program to tackle technical energy losses and faulty meter replacements, bulk metering and asset protection; as well as campaigns like “Operation Komboa” – a commercial (non-technical) energy loss reduction initiative.

Safety

Safety in the operation and maintenance of the distribution network during the review period (2017-2019), has promoted and continues to promote SDG number 13 which requires that urgent action is taken to combat climate change. Umeme promotes environmental preservation through timely, regular and effective management of electricity distribution transformer waste (PCB positive transformers) which would otherwise have been a major contributor to environmental degradation.

Investments in Network Expansion and Demand Growth

Capital investments in the distribution network and implementation of the Electricity Connections Policy during the review period (2017-2019), delivers on NRM's manifesto chapters six and fifteen which detail the promotion of industrialization and infrastructure development respectively and continues to promote SDG number 9 which requires that resilient infrastructure is built; as well as SDG number 7 which requires us to ensure access to affordable, reliable, sustainable and modern energy for all.

As part of the drive to promote industrialization, Umeme has concentrated its effort on electrification of the GoU demarcated twenty-five industrial parks. The completed parks include; the Kapeeka industrial park, the Kampala industrial and Business Park (KIBP) and the Mbale industrial park.

Loss Reduction

Loss reduction into the distribution network during the review period (2017-2019), has promoted and continues to promote SDG number 7 which requires Umeme to ensure access to affordable, reliable, sustainable and modern energy for all because by ensuring lower distribution losses which has led to a more reliable electricity supply.

Implementation of ICT Systems (SAP & HRIS)

Implementation of ICT systems to automate and increase our efficiency in operation of the distribution network during the review period (2017-2019), has promoted and continues to promote NRM manifesto chapter eleven on human capital development through the training and equipping of personnel in the use of new technology and software that increases efficiency in service delivery and chapter fifteen which promotes infrastructure development.

These initiatives also promote SDG number 7 which requires us to ensure access to affordable, reliable, sustainable and modern energy.

Customer Service delivery and Outreach programs

Customer service delivery and outreach programs during the review period (2017-2019), delivers on NRM manifesto chapter eleven which talks about the development of Human Capital because the Umeme contact centre is running on both a digital and telephone call centre which requires intensive training of personnel which equips them with new skills they can use both in and outside of Umeme.

The above initiatives also promote SDG number 7 which requires Umeme to ensure access to affordable, reliable, sustainable and modern energy for all since customers in need of an electricity service or who have queries about their electricity service are attended to in the shortest possible time.

Impact of Covid-19 and Mitigation Strategies by Umeme

In this section, we present the estimated impact of COVID-19 on Umeme business and the mitigation strategies and measures that have been undertaken to address it.

3.6.3 Challenges to UMEME performance and mitigation measures

i. Safety

Umeme has had to upgraded all health and safety procedures in line with the Ministry of Health (MoH) SoPs at a significant additional cost to the provided Distribution Operation and Maintenance Costs (DOMC) since Umeme had to purchase personal protective equipment like masks, sanitisers and hand washing equipment, laptops, MiFi's, etc. for all service centres which are spread countrywide.

ii. Way of Work to deliver service

Based on the MoH guidelines, social distancing has had to be adopted while we deliver our mandate to the customers which implies that the company is using more resources like vehicles, motorbikes and fuel for transport to deliver on our mandate. The Company has to use more vehicles to ferry the same number of staff as compared to the pre-COVID 19 period.

iii. Negative Growth

COVID-19 has affected Umeme energy sales and revenues, distribution loss levels and cash collection rates from customers as follows:

- Drop in monthly energy sales by 29% in April 2020. The revenue collection rate dropped to as low as 76.5% in April 2020 compared to 98.6% in the same period last year.
- Electricity distribution losses increased from 15.0% in February 2020 to 20.9% in April 2020 against the annual target of 14.4%.
- The negative growth has had an adverse impact on the company's cash flows as evidenced by the drop in energy sales and the drop-in revenue collection rate.
- In order to mitigate these impacts, Umeme is set to engage ERA in order to review and the tariff performance targets that have become untenable. A strong stakeholder support system is also very necessary in this regard.

3.6.4 UMEME Plans and Strategies for FY2021/2022

- i. Strengthen the medium voltage (MV) back bone and interconnection with the transmission network.
- ii. Provide adequate infrastructure and technical personnel to supply the 25 industrial parks.
- iii. Build substations and inject power transformers in fast growing areas. Eight (8) substations are under development/upgrade as part of our 2020 investment program.
- iv. Investments in ICT to uplift SCADA and CEMI to 100% coverage, and to implement the Geospatial Network Information System (GNIS).
- v. Restoration of the LV network
- vi. Billing data reviews;

- vii. Meter audits;
- viii. Bulk metering;
- ix. Meter securing, and
- x. Network re-conducting and re-configuration to deter direct connections.

3.7 Rural Electrification

Rural Electrification Agency (REA) is a statutory body established in 2001 to facilitate the Rural Electrification Programme of Government. In the year review, the Agency added onto the National Grid 2,550Km of Medium voltage Networks, 2,596 Km of Low Voltage Networks and provided 152,482 households access to electricity through the Electricity Connections Policy.

3.7.1 Implementation Status of Rural Electrification Undertakings for FY 2019/20

Table 19: Implementation Status of Rural Electrification Undertakings for FY 2019/20

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
1. Connection of 300,000 last mile consumers onto the national grid	152,482 households were connected to the national grid	Inadequate funding	Preparation of the Electricity Scale Up project in order to secure financing for connections
2. Construction works totaling to 3,200km of MV and 2,100km of LV	MV: 2,550Km and LV:2,596Km of line networks were connected to the national grid	The outbreak of the COVID 19 pandemic that has slowed down progress of works	Standard Operating Procedures (SOPs) have been adopted on ground for contractors
3. Implementation of 47 mini-grid systems	Negotiations were concluded with private sector partners for the 40 pilot mini grids. Land for the projects was identified, the final contractor's design was concluded and the contractor placed orders for materials	Higher than desirable tariffs presented by the private sector which required negotiation, land values for the land identified for the 25 mini grids in the North were rejected by CGV, the outbreak of the COVID 19 pandemic hindered the delivery of materials for orders placed	An additional subsidy was obtained from the Development Partner to reduce the tariff payable by the end user
4. Completion of	Master Plans for all	The sector is	A decision on

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
Master Plans for all Service territory and initiation of procurement process for the SP's	the 13 rural service territories were concluded, procurement of private service providers was not initiated	discussing how best to operate the networks; a study was carried out. REA therefore, put the procurement of service providers on hold	service territory operations should be made
5. Achieve 100% electrification of district headquarters in Uganda, Commence construction works targeting connecting 287 (out of 603) Sub-county, Division and Town Council headquarters	District headquarter electrification at almost 100%(Kotido to be electrified by September, 2020 and Kaabong by October, 2020) The sub county electrification project commenced in 25 districts (with 164 sub county headquarters to be served), the project scope now covers 570 sub county headquarters	Funds for the electrification of Buvuma district headquarter were yet not secured The outbreak of the COVID 19 pandemic that has hindered the REA team from travelling to conduct FATs on imported materials, shipment of materials on orders placed, reduced the numbers of gangs/teams on ground in order to comply with the Social Operation Procedures (SOPs)	Implementation has been split into 6 phases. Each phase completed will be commissioned Discussions are underway with contractors on alternative ways to conduct FATs on imported materials
6. Implementation of the Balanced Score Card management system	The Balanced Score Card was concluded but its implementation did not commence. The consultant's assignment also covers training on change management and implementation of the BSC	The scope of the consultant's assignment was not concluded due to suspension of funding	The activity will be prioritized immediately the suspension on the funding is lifted

Agreed Undertakings	Progress Undertakings	on Challenges	Measures to mitigate challenges
7. 2000 Kms of lines surveyed for future implementation	2,500Km surveyed under future projects	were	

3.7.2 Other key sector achievements in FY 2019/20

- i. Construction of electricity network at 33kv for areas in Amuru, Awoya and cross border areas in Kaya and Nimule town council located in Southern Sudan funded by Government of Uganda commenced.
- ii. Construction of Non- GET-FiT hydro power plants and rural electrification projects in the environs of get-fit projects located in Bundibugyo, Kabarole and Kasese funded by Government of Uganda commenced.
- iii. The site for the Construction of Muziz B substation and power evacuation lines for Bukinda and lower Nkusi hydro power projects in Kibaale district was handed over to the contractor.
- iv. Construction of GoU priority projects (8 lots) funded by GoU commenced.
- v. Construction of Kanyantorogo switching station in Kanungu District was completed.
- vi. Construction of Rural electrification projects in six districts of Uganda funded by Kuwait fund (KFAED) commenced.
- vii. Project for electrification of refugee settlements in Northern Uganda funded by the Norwegian Government grant commenced.
- viii. Interim Quality Assurance Framework for solar standalone home systems completed, preparation of the Long-Term Quality Assurance framework commenced with support from World Bank.
- ix. Establishment of quality assurance framework for plug and play SHS and Pico solar funded by World Bank commenced
- x. Get Access Mini Grid feasibility study funded by KfW commenced
- xi. Closure of first successful Results-based Finance projects (off-grid solar & grid densification (implemented by REA) through which EnDev facilitated access to over 32,000 people in the second half of 2019 alone
- xii. Preparation of the pre-feasibility study and concept note to the Green Climate Fund was completed with a potential of setting up at least 600 mini-grids.

3.7.3 Investment Priorities for FY 2021/22

- i. 100% completion of works for projects under AfDB financing (MV 1,392km and LV 1,482km)
- ii. Project preparation in line with the Service Territory Master Plans advanced
- iii. Financing for the electrification of Buvuma and Sigulu Island secured
- iv. 100% completion of the 40 Mini grids implemented with support from European Union, GIZ and the private sector

- v. 100% completion of works under the Sub County electrification project under China Exim Bank financing (570 sub county headquarters and environs)
- vi. 100% Completion of works for the 17 lines under ERT III
- vii. 100% completion of works of rural electrification projects in six districts of Uganda funded by Kuwait fund (KFAED)
- viii. 300,000 Last mile connections achieved under the Electricity Connections Policy
- ix. 100% Completion of GoU priority projects (8 lots) funded by GoU
- x. 100% Completion of works for the electricity network for areas in Amuru, Awoya and cross border areas in Kaya and Nimule town council located in Southern Sudan funded by Government of Uganda
- xi. 100% completion of Non- GET-FIT hydro power plants and rural electrification projects in the environs of get-fit projects located in Bundibugyo, Kabarole and Kasese funded by Government of Uganda
- xii. 100% of additional works under the Islamic Development Bank Phase II project.
- xiii. 10,000 quality SHS facilitated through the Last-mile RBF funded by EnDev, USAID & SDC
Over 500 MSMEs & 700 Schools gain access to quality SHS through EnDev RBF partnerships
Completion of the feasibility study and submission of funding proposal to the Green Climate Fund for the development of 600 mini-grids.

3.8 Energy Management

The Ministry through the Energy Efficiency Promotion Program aims at ensuring sustainable utilization of energy in all sectors of the economy. Energy management includes planning and operation of energy production and energy consumption units.

In the year under review, the Energy Efficiency and Conservation Department undertook a number of interventions and activities geared towards Demand Side Management of Energy Resources whose performance is detailed below.

3.8.1 Implementation Status of Energy Management Undertakings for FY 2019/20

Table 20: Implementation Status of Energy Management Undertakings for FY 2019/20

Agreed Undertakings	Progress on Undertakings	Challenges
Kick-start the Energy Efficiency and Conservation Bill/Law (Awareness programs, Benchmarking activities, Training)	Regulatory Impact Assessment to justify the Energy Efficiency and Conservation Bill was conducted, report produced and submitted to cabinet secretariat; Revision of the Energy Efficiency and Conservation Bill done and cabinet memo resubmitted to the cabinet secretariat Awareness strategy and roadmap for the Energy Efficiency and Conservation Bill developed;	Awareness to the general public halted pending enactment of the bill into the Energy Efficiency and Conservation Act

Agreed Undertakings	Progress on Undertakings	Challenges
	<p>Awareness materials regarding requirements compliance with the Energy efficiency and Conservation law developed. Awareness creation regarding the Energy Efficiency and Conservation Bill (EECB) created among Energy Efficiency experts. This was done through the capacity building sessions conducted by the Energy Efficiency and Conservation Department. Also, awareness materials disseminated during the sessions.</p> <p>Awareness creation on the Energy Efficiency and Conservation Bill (EECB) created among Cabinet Secretariat in the Office of the President during the two-day workshop at Imperial Resort Beach Hotel on March 11 to 13, 2020.</p>	
Develop the Energy Efficiency Strategy and Plan	Development of the Energy Efficiency Strategy and Plan pending the approval of the Energy Efficiency and Conservation Bill.	
Implement the Standards and Labeling Program	<p>The 5 MEPS that were developed are being implemented under the UNBS's Pre-Export verification of conformity (PVoC) program. The Ministry acquired a testing unit for lighting appliances which is used to undertake surveillance testing of lighting appliances. Surveillance testing of lighting appliances conducted in November 2019 as part of the process to test for the suitability of the lighting appliances on the Ugandan market in comparison to the minimum energy performance standards (MEPS) as provided for in the EE standards for Uganda.</p>	The process of acquiring the remaining four testing equipment has not been started due to lack of funds
Conduct the Energy Week 2019	<p>Energy Week 2019 conducted and was held on September 23-29, 2019 in Kampala. Activities of the Energy Week 2019 included Road drives which were conducted in Kampala on September 19-23, 2019; the Energy Exhibition 2019 held</p>	

Agreed Undertakings	Progress on Undertakings	Challenges
	<p>in Kampala at KCCA grounds on September 23-29, 2019; The Power Forum held in Kampala at Pearl of Africa Hotel on September 25, 2019 and the Biomass Energy Dialogue held on September 27, 2019 at Hotel Africana.</p>	
<p>Implement SMEs Energy Efficiency Program</p>	<p>Installation of solar PV systems and solar water heaters at Katuzzi Limited completed Supply and Installation of Ten (10) Units of Power Factor Correction Equipment in Seven (7) SMEs clusters in August 2019. The objective of supplying the equipment was to demonstrate the impact of improving the power factor from the current level to 0.99. In this regard, the SMEs can reduce their energy consumption and hence maximize business profits through reduced power bills. Beneficiaries include: Kasana industries limited, Viseki Ltd, Kisenyi Church Zone, Jana milling association, Natete kikuubo millers, Johnrick trading Co & Property, Yellow TX Kisenyi Millers</p>	
<p>Training of 30 Energy Efficiency Professionals, certified energy managers and auditors</p>	<p>Business development trainings conducted in Arua from 8th to 29th October 2019 attended by 117 participants and Nebbi from 6th November to 7th November 2019 attended by over 81 participants.</p> <p>Training of Energy Efficiency Professionals on how to use the various energy audit equipment conducted. The theoretical training was conducted on 25th November 2019 at Golden Tulip Hotel, Kampala. The practical training was conducted on 26th - 29th November 2019 at two plants in Namanve Industrial Area.</p> <p>Energy Management Training conducted for District focal persons in Lango Sub-region, in Lira on March 16-17, 2020</p>	
<p>Conduct 10 energy</p>	<p>Energy Audits Conducted for the period</p>	

Agreed Undertakings	Progress on Undertakings	Challenges
audits in selected industries and institutions	under consideration include: Inomo Investments Ltd, Gulu Uganda Country Diary, Mt Meru Millers, Nyero maize millers, Nile Roofings Gulu, Ntake bakery Lira, Pawat Northern Bakery Gulu, Winwood millers), Ministry of Science, Technology and Innovation, Bakhresa Grain milling (U) Ltd, Century Bottling Company Ltd.	

3.8.2 Other Energy Management achievements in FY 2019/20

- i) Clean Energy Fair conducted in Gulu at Kaunda Grounds from 11th to 17th November 2019. The overall goal of the Gulu Energy Fair was to promote the efficient utilization of energy by positioning clean energy products, such as improved cook stoves, solar Pico PV Lanterns, Portable solar home kits, and charcoal briquettes as household products.
- ii) Sustainable Energy Campaign conducted in Western Uganda, Hoima from 23rd to 27th July 2019 at Hoima Booma Grounds. The general objective of the Sustainable Energy campaign 2019 was to boost the adoption and utilization renewable energy and energy efficient technologies and practices in the country which in turn reduces energy demand for the good of the environment.
- iii) Market survey for Renewable Energy and Energy Efficiency in in West Nile and Northern Uganda. A survey to provide insights on consumer's knowledge, attitudes & perceptions of consumers of Renewable Energy & Energy Efficiency was conducted in August 2019. The study was conducted in three selected towns of West Nile and Northern Uganda of Arua, Gulu and Lira. The target study population consisted of Households, Microfinance Institutions, District Local Government representatives, Small and Medium Enterprises and Civil Society Organization.

3.8.3 Challenges to Energy Management performance and measures undertaken to remedy

Table 21: Challenges to Energy Management performance and measures undertaken to remedy

Challenges	Measures
Closure of the PREEEP project which was funding some of the outputs such as MEPS and training and certification of energy auditors and Fuel Efficiency.	A new Project is being prepared to bridge the gap
Disruption of activities by COVID 19 restrictions	Undertaking activities in accordance with the guidelines provided by the Ministry of Health
Low level of staffing	Additional staff have been hired at entry (officer) level and have

	assumed office
Lack of personal protective equipment (PPE) to safeguard against safety	Requests have been made for the department to acquire PPE

3.8.4 Energy Management Plans and strategies for FY2021/22

Table 22: Energy Management Plans and strategies for FY2021/22

Strategy	Intervention
Promote Energy Efficiency in household and institutions	<ol style="list-style-type: none"> 1. Promote Clean and Efficient Cooking for domestic and institutions 2. Promote Productive use and efficient utilization 3. Conduct Energy Management Trainings for SMEs and Institutions 4. Conduct feasibility studies at SMEs and institutions on of electricity
Promote Energy Management in high energy consuming facilities	<ol style="list-style-type: none"> 1. Implement the energy audit programme for industries in 10 industries 2. Implement energy management systems in accordance with the ISO 50001 standard in 5 large energy consuming facilities 3. Implement the SME Energy management programme in 10 clustered SMEs 4. Eco Industrial Parks Promotion in 3 established industrial parks
Capacity building in energy management and energy efficiency	Conduct training for 50 energy management professionals
Implementation of Minimum Energy Performance Standards for the specified energy consuming appliances	<ol style="list-style-type: none"> 1. Implement standards for the five appliances 2. Develop standards for five energy using appliances
Conduct awareness campaigns to promote efficient utilization of energy	<ol style="list-style-type: none"> 1. Conduct Energy Week 2021 2. Conduct at least one regional Sustainable Energy Campaign
Promote Vehicle Energy Efficiency in Uganda	<ol style="list-style-type: none"> 1. Promote standardized vehicle fuel efficiency labeling

3.9 Promotion of Renewable Energy Technologies

3.9.1 Implementation Status of Promotion of Renewable Energy Undertakings for FY 2019/20

Table 23: Status of Promotion of Renewable Energy Technologies Undertakings for FY 2019/20

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
4MW grid connected solar power plant completed at Busitema University with the grant from Egypt.	Manufacturing of the 4MW solar equipment completed Transportation of the equipment to the project site completed	Delays in completion of the feasibility studies, acquisition of the regulatory permits Closure of the airport prevented entry of the Egyptian counterpart	Budget for feasibility studies and license fees
Solar street lighting demonstration systems installed in 2 upcountry town councils	solar street lights installed in five (5) upcountry town councils including Lumino-Busia, Nagongera-Tororo, Buikwe, Manafwa and Goma	The solar systems installed per town council were very few	Budget for more street lights per Town Council
3 large solar water heating systems installed at selected healthy Centers	Not done	Insufficient budget allocation	Provide sufficient budget in the FY2021/22
5 hybrid solar/Bio thermal driers for post-harvest agricultural produce installed at selected farms across the country	One (1) hybrid solar/bio thermal driers installed in Kikyusa, Luwero District	Insufficient Budget allocation Demand for the solar driers is overwhelming due to big quantities of produce	Provide sufficient budget in the FY2021/22
6 wind measuring masts installed in North-eastern region of the Country, Karamoja inclusive under the	Wind measuring masts were not installed in the North eastern region	The procurement process for a consultant for installation of the 6 wind measuring	Plan for Installation of the wind mast under GOU Budget

Scaling up of Renewable Energy Programme (SREP).		masts was initiated however the project was cancelled by the developments partner (African Development Bank)	
Wind data laboratory set up at the Ministry under the scaling up of Renewable Energy Programme (SREP).	Wind data laboratory set up at the Ministry was not set up	project was cancelled by the developments partner (African Development Bank)	Provide sufficient budget in the FY2021/22
2 new water pumping windmills installed and 3 existing wind mills overhauled/repared	Nonfunctional wind Mills for water pumping were not repaired	Insufficient funds	Provide sufficient budget in the FY2021/22
A 120KW community Pico-hydro power project development on-going at Isuule in Kasese District.	Feasibility studies and designs were completed Construction of the 120 KW hydro power project was halted.	Procurement of the 120KW turbine was halted due to Insufficient funds	Provide sufficient budget in the FY2021/22

3.9.2 Promotion of Renewable Energy Technologies Plans and Strategies for FY2021/22

- i. 2 Pilot solar system installed to study the grid integration with small renewable energy systems
- ii. 4MW solar project at Busitema operated and maintained
- iii. 20 town councils electrified with solar street lights
- iv. 10 solar water heating systems disseminated in the health centers
- v. 10 solar water pumping systems demonstrated
- vi. 10 solar driers installed in agricultural communities
- vii. 30 nonfunctional wind mills rehabilitated and solar/ wind energy projects installed
- viii. 10 sites for Pico hydro projects identified, studied and packaged for development
- ix. 200 technicians trained and capacity of the Ministry officials built in Renewable energy Technologies
- x. 10 solar/wind energy systems installed in public institutions and trading centers

3.10 Electricity Disputes Resolution

The Electricity Disputes Tribunal is a specialist quasi-judicial body that was established under section 93 of the Electricity Act 1999 to hear and determine all matters relating to the Electricity Sector save for criminal matters, and in the exercise of its jurisdiction has all the powers of the High court.

During the year under review, the Tribunal became fully constituted with 7 members and a substantive registrar also appointed. Detailed below is the implementation status of Electricity Disputes Resolution undertakings for the FY2019/20, strategies and priorities for the FY2021/22.

3.10.1 Implementation Status of EDT Undertakings for FY 2019/20

Table 24: Implementation Status of EDT Undertakings for FY 2019/20

Undertaking	Progress on undertaking	Challenges	Mitigation measures
Finalise the hearing of existing complaints as well as receiving and processing new complaints.	<p>From 1st July 2019 to 30th June 2019, the tribunal registered 30 new cases and out of these 7 cases have been resolved.</p> <p>From 1st July 2019 to 30th June 2020, the tribunal still has a back log of 398 cases. Of these 28 cases have been resolved leaving 370 cases which are at different stages of completion.</p>	<p>Limited number of members; EDT had up to August 2019, 3 part time members who had to be present at any hearing. Absence of any one member deprived it of the statutory quorum.</p> <p>The Minister of Energy in the month of August 2019, appointed more 5 members to the tribunal. With the members fully constituted, the tribunal can fully hear cases and achieve its mandate.</p> <p>The new five members also need some time to understand, comprehend as well as get acquainted with the case files.</p> <p>Frequent applications for adjournment by a parties, affect speedy progress and denial of such adjournments in</p>	<p>More five members were appointed by the Minister of Energy. The Tribunal is now fully constituted. Tribunal to grant adjournments with strict timelines and only for sufficient causes.</p> <p>Tribunal encourages litigants to be vigilant so that cases can be resolved speedily. Tribunal encourages interparty mediation as much as possible, so as to minimise lengthy and costly litigation.</p>

		worthy cases may be ground for appeal Ligation is lengthy and time consuming.	
Conducting at least one regional workshop and continuing with other public Awareness Campaigns.	The workshops are aimed at sensitizing the communities on the existence of the tribunal and enhance its accessibility to the people in different communities. No regional workshop was undertaken.	Unlimited funds which hinder the undertaking of some activities.	Funds should be allocated as the per EDT budget and in a timely manner.
Rolling out sittings of EDT to other districts in bid to enhance access.	To enhance access to justice and increase awareness of the existence of the tribunal, EDT rolled out its hearings to the districts of mitooma and Namayingo. A large number of complaints are received from these districts namely; from 300 cases in Hoima,52 from Namayingo,30 from mitoma and 131 cases from kasese.	Listening to each individual complainant is tedious, time consuming, repetitive and exhausting.	Tribunal encouraged complaints with similar complaints to appoint focal persons who present their respective cases.
Training and capacity building for members and staff of EDT	One staff was trained in Customer care and communication skills for secretaries and Administrators. Other staff were not trained because o of the Corona virus pandemic.	Limited funds	Continue to solicit more funds so as to Capacity Building for the Staff and the Members.
Study visit to similar organisations for benchmarking good practices.	This was not undertaken because of the corona virus pandemic.	Limited funds	Continue to solicit more funds so as to undertake bench making trips to learn and adapt good practices.

3.10.2 Plans and strategies for FY2021/22

- i. Finalise the hearing of existing complaints as a well as receive and process new complaints
- ii. Develop a Strategic Plan for the Electricity Disputes Tribunal.
- iii. Develop and Implement a Communication Strategy for the Electricity Disputes Tribunal.
- iv. Roll out EDT Sittings to other districts to enhance access.
- v. Training and Capacity Building for staff and members. Electricity being a highly technical sector. EDT will continue to identify relevant short courses for staff and members so as to fill skills gaps.
- vi. Conduct Regional Workshops to create more public awareness about the Electricity Disputes Tribunal.
- vii. The Electricity Disputes Tribunal will seek to improve its case Management system by acquiring electronic case management tools and recording equipment for its proceedings.
- viii. Operationalise its Finance and Accounting Autonomy.

3.11 Uganda Energy Credit Capitalisation Company Ltd

The Uganda Energy Credit Capitalisation Company (UECCC) was set up to serve as a Credit Support Institution, working with various partners including but not limited to Financial Institutions and Development Partners to provide innovative financing options for renewable energy and/or rural electrification projects/ programs on business principles.

To date, UECCC has been able to partner with fifteen (15) Financial Institutions to offer different financing solutions and technical assistance including: Solar Financing Program (end-user and solar companies), On-grid Power Connection Programme, and a Pilot Biogas Financing Program amongst others to address the barriers to renewable energy financing.

Detailed below is the implementation status of Uganda Energy Credit Capitalisation Company undertakings for the FY2019/20, strategies and priorities for the FY2021/22.

3.11.1 Implementation Status of UECCC Undertakings for FY 2019/20

Table 25: Implementation Status of UECCC Undertakings for FY 2019/20

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
Solar (end-user) Financing Facility through PFIs: Continue roll out of the Solar Financing Facility through Eight (8) Participating	<ul style="list-style-type: none"> • During FY19/20, Five (5) additional Financial Institutions (125%) were brought on-board for the Solar Financing Facility. 	There is emerging demand for financing facilities to support acquisition of institutional systems and solar systems for productive uses.	<ul style="list-style-type: none"> • Solicit for funding for institutional solar systems and productive uses of solar.

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
<p>Financial Institutions (PFIs), targeting 4 new PFIs on-lending 2000 loans to households, institutions and SMEs for acquisition of solar systems.</p>	<ul style="list-style-type: none"> • By the end of June 2020, eleven (11) financial institutions were participating in the program. • 2,111 loans/solar systems (106%) amounting to UGX 854,689,949 were registered. • Cumulatively 11,055 loans/solar systems amounting to UGX 5,301,105,840 have been installed as a result of the financing offered under the program 	<p>Unfortunately, UECCC does not have funding support for the purpose.</p>	<ul style="list-style-type: none"> • Enrol additional Tier IV Financial Institutions to participate in the Program.
<p>Working Capital and Partial Risk Guarantee Facilities: To disburse UGX 3.8 Bn to Solar Companies in the form of Working Capital and Partial Risk Guarantee Facilities.</p>	<p>Working Capital Facilities (WCFs) and Partial Risk Guarantees (PRGs) worth UGX 3.25 Billion were extended to PFIs for on-lending to Solar Companies.</p>	<p>Eligibility criteria to qualify for the solar working capital was initially restricted to Lighting Global certification which limited access to the facility by many companies dealing in component-based systems.</p>	<p>A Quality Assurance Framework was finalized and adopted to facilitate on-lending o Solar Companies dealing in component-based systems.</p>
<p>Connection Loan Program; Roll out the Connection Loan Financing Facility through Centenary Bank and 2 new Financial Institutions targeting 200 new</p>	<ul style="list-style-type: none"> • 162 loans/ on-grid connections valued at UGX 262,970,000 Million were disbursed by Centenary Bank. (81% of the annual target). • Cumulatively, 623 	<p>The COVID - 19 pandemic and subsequent lockdown affected disbursements due to low demand</p>	<p>More Financial Institutions have been brought on board to participate in the Program</p>

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
on-grid connections.	loans/ on-grid connections valued at UGX 1,848,122,100 had been extended as at June 2020. <ul style="list-style-type: none"> • UECCC brought on board two (2) additional Participating Financial Institutions (Finance Trust Bank and Opportunity Bank) to participate in the facility. 		
Pilot Biogas Financing Facility: UECCC will continue to install demonstration biogas systems and/or technologies for households.	54 biogas demonstration systems were installed.	The Pilot has so far demonstrated that the fixed dome biogas technology had quality assurance challenges in comparison to the balloon type (Sistema biobolsa).	In the next FY, UECCC plans to demonstrate other biogas technologies.
The ORIO Mini-Hydro Power Project; Continue implementation of the Construction Phase. The project entails the development of nine (9) mini hydro power sites (combined capacity of 6.7 MW), a 288km distribution network and a targeted 71,081 connections	Resettlement Action Plan (RAP) <ul style="list-style-type: none"> • Completed preparation of the RAP report and the valuation report was approved by the Chief Government Valuer (CGV). • RAP implementation commenced and as at end of June 	Inadequate GoU Co-Funding: Annual allocations for the Project have consistently fallen short of the GOU co-funding commitments under agreement resulting in a cumulative shortfall of UGX 76.06 Billion.	To continuously engage GoU to provide funding for the project now that the procurement process for contractors has commenced.

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
in the project area as a single project.	<p>2020, 236 consenting PAPs out of 345 (68.4%) had been compensated.</p> <p>Owners Engineer The Contract for Owner's Engineer (OE) was signed in December 2019.</p>		

3.11.2 Other UECCC achievements in FY 2019/20

- i. Five (5) additional Financial Institutions (100%) were brought on-board for the Solar Financing Facility namely: Buturo Peoples' SACCO in Bushenyi, Sky Financial Services Ltd in Mukono, Soroti Teachers' SACCO in Soroti, Sebei Farmers' SACCO in Kapchorwa and Unique SACCO in Kabale.
- ii. Two (2) additional Participating Financial Institutions brought on board (Finance Trust Bank and Opportunity Bank) to participate in the Connection Loan Program.

3.11.3 UECCC Plans and strategies for FY2021/22

Table 26: UECCC Plans and strategies for FY2021/22

Development Indicators	Target 2020/21
Solar Financing Facility through PFIs	
No. of Solar loans and systems for Households & Institutions facilitated	2,000
No. of additional PFIs brought on board	3
On-Grid Connection Loan Financing Facility	
No. of loans/on-grid connections facilitated for wiring & 3-phase connections	250
No. of more PFIs brought on board	2
Solar Working Capital Facility	
Amount of Working Capital & Guarantee facilities disbursed to Solar Companies by PFIs in FY	USD 1.0m
ORIO Project	
No. of PAPs compensated	100%
To finalise procurement of Contractors for the ORIO Project	

3.12 Promotion of Nuclear Energy

The Ministry continued the promotion and development of nuclear energy for peaceful uses in electricity generation, cancer management, food safety assessment, tsetse control, improving agricultural productivity, water resources management and industries. The implementation status of Nuclear Energy Promotion undertakings for the FY2019/20 is detailed below.

3.12.1 Implementation Status of Nuclear Energy Undertakings for FY 2019/20

Table 27: Implementation Status of Nuclear Energy Undertakings for FY 2019/20

Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
Nuclear Energy Policy in place	The Nuclear Energy Policy was integrated in the revised Energy Policy for Uganda		
Comprehensive nuclear law in place	Preparation of a Regulatory Impact Assessment (RIA) were initiated.		
Baseline environmental data from potential nuclear power sites collected	Limnology data acquired from the potential cooling water bodies of Lake Kacera and River Aswa.	Limited funds to cover other water bodies (Lake Wamala and Kyoga).	
Meteorological monitoring stations designed and constructed	Land for installation of meteorological monitoring station in Buyende District was identified Contractor to design, install and commission meteorological monitoring station was selected. Contract award is pending the final acquisition of the land.	Limited registered land in the project area.	Encourage communities in the project area to register land
Nuclear power project developer identified	An Inter-Governmental Agreement (IGA) between Uganda and Russia on peaceful use of nuclear energy was signed on 17th September 2019 in Vienna, Austria.		

Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
	Negotiations with potential nuclear power project developers are ongoing.		
Specialized training for two (02) members of staff under the Nuclear Energy Unit undertaken	Two members of staff completed MSc in nuclear fields		
Radioactive waste management strategy finalized	Stakeholder consultative meetings on radioactive waste management were conducted.	Lack of a clear government policy on radioactive waste management	Fast track the revised energy policy
Uranium exploration and evaluation monitored	IAEA Technical cooperation project concept on supporting detailed uranium exploration and evaluation was approved.		
The Country Programme Framework between GoU and IAEA signed	A Country Programme Framework (CPF) between Government of Uganda and International Atomic Energy Agency (IAEA) was signed on 19th September 2019 in Vienna, Austria.		
Awareness on nuclear energy conducted.	Awareness materials on nuclear energy were disseminated during the energy and minerals week 2019.		
IAEA Technical Cooperation Projects monitored.	Two (02) IAEA postgraduate fellowships for Atomic Energy Council and supply of Quality Control (QC) equipment for Uganda Cancer Institute were coordinated. IAEA donation of nuclear	Limited counterpart funding for Technical cooperation projects	Integrating technical cooperation projects activities within the annual work plans

Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
	derived Covid 19 PCR test kits to Ministry of Health was coordinated.		

3.12.2 Other Promotion of Nuclear Energy achievements in FY 2019/20

- i. Consultations on establishment of Soroti University Centre for Nuclear Science and Technology was held on 19th July 2019 at Soroti University Campus. A project concept on supporting the establishment of the Centre was approved IAEA and it's under project design phase. IAEA will be providing technical support to the project.
- ii. A Ugandan delegation participated in IAEA annual general conference from 16th – 20 September 2019 in Vienna, Austria.
- iii. Further negotiation of bilateral cooperation on nuclear energy development between the Government of the Republic of Uganda and the Government of the Russian Federation were held in Sochi, Russia in October 2019 during the Africa – Russia Summit.
- iv. Terms of Reference for feasibility studies for establishment of a gamma irradiation facility to improve quality of agro-produce for export by Uganda Development Corporation (UDC) were finalised.
- v. IAEA expert mission to audit the performance of the technical cooperation programme in Uganda was coordinated from 2nd – 13th March 2020

3.12.3 Challenges to Promotion of Nuclear Energy performance

- i. Weak policy, legal and institutional framework to guide the sub-sector.
- ii. Inadequate skilled human resource in the sub-sector.
- iii. Inadequate counterpart funding in the partner institutions where the IAEA-Technical Cooperation Programme (IAEA-TCP) is being implemented.
- iv. Limited public knowledge of the nuclear techniques and their benefits to society.
- v. Most of the land situated in the potential sites is unregistered, posing challenges in acquisition.
- vi. Delays in procurement processes.

The following measures are being undertaken to address the challenges: -

- i. Continue with development of a nuclear energy policy for Uganda.
- ii. Continue with building capacity for nuclear energy projects planning and management through IAEA Technical Cooperation Programme and other government initiatives.
- iii. Provide technical support to peaceful applications of nuclear energy in agriculture, water and health sectors.
- iv. Conduct regular awareness campaigns in training institutions, at district level and actively participate in annual Energy Week.

- v. Continue engaging stakeholders in the implementation of nuclear energy activities through working groups to gain trust and utilize existing expertise.
- vi. Engage with Ministry of Lands Housing and Urban Development on land related matters.

3.12.4 Promotion of Nuclear Energy Plans and strategies for FY2021/22

Table 28: Promotion of Nuclear Energy Plans and strategies for FY2021/22

Investment Priorities	Key Outputs
Nuclear Power Infrastructure Development	<ul style="list-style-type: none"> • Final Nuclear Power Plant site selected • IAEA Integrated Nuclear Infrastructure Review (INIR) completed • Bilateral cooperation on nuclear energy coordinated and implemented. • Land for automatic weather station acquired in Buyende. • Automatic Weather station for meteorological monitoring constructed in Buyende.
Nuclear Fuel and Radioactive Waste Management	<ul style="list-style-type: none"> • Spent fuel and radioactive waste management strategy finalised • Strategic Environmental Assessment (SEA) completed • Uranium exploration and evaluation monitored
Nuclear Science and Applications	<ul style="list-style-type: none"> • Preparatory activities for construction of Centre for Nuclear Science and Technology conducted • Establishment of a gamma irradiation facility to improve quality of agro-produce for export monitored • IAEA Technical Cooperation Projects monitored • A comprehensive nuclear law in place.

3.13 Atomic Energy Regulation

Atomic Energy Council (AEC) is a statutory body created by the Atomic Energy Act 2008 to regulate and promote the peaceful application of ionizing radiation in the Country. Detailed below is the implementation status of Atomic Energy FY2019/20 undertakings.

3.13.1 Implementation Status for AEC Undertakings for FY 2019/20

Table 29: Implementation Status for AEC Undertakings for FY 2019/20

Agreed Undertakings	Progress on Undertakings	Challenges
Registration of 80 facilities using ionizing radiation	28 (35%) New facilities were registered	COVID 19 Lockdown
Conduct Inspection of 250 facilities using ionising radiation	200 (80%) inspections were conducted	<ul style="list-style-type: none"> • Inadequate staffing of technical staff • Inadequate inspection equipment • COVID 19 Lockdown
Issue 360 authorizations to facilities using ionizing radiation.	226 (63%) Authorizations were Issued	<ul style="list-style-type: none"> • Failure of facilities to meet authorization requirements • COVID 19 Lockdown
Conduct 60 pre-authorization inspections	33(55%) Pre-authorization inspections were conducted	<ul style="list-style-type: none"> • Inadequate inspection equipment • COVID 19 Lockdown
Conduct 12 stakeholder engagements on Promotion of public awareness on radiation protection and nuclear safety	15 (125%) stake holder engagements were conducted	
Monitor 70% of occupationally exposed radiation workers.	871 (70.1%) out of 1243 radiation workers were monitored	Inadequate personal dosimeters
Purchase of 20 batches environmental monitoring equipment	20 (100%) batches environmental monitoring equipment were procured	
Gazette 2 practice specific regulations	NIL	<ul style="list-style-type: none"> • Long approval process • COVID 19 Lockdown
Complete the radioactive sources store for orphan and disused sources	The interim radioactive source store was completed	

4. BIOMASS RESOURCE MANAGEMENT

4.1.1 Introduction

Biomass continues to play a critical role in Uganda's economy by contributing over 88.6% of the total primary consumable energy. Biomass also remains the biggest source of heating and cooking energy in the country for households, institutions, SMEs and industries. In addition, it is a popular source of energy for value addition in the areas of: tea and tobacco curing, ceramics, confectionery and other rural based industries.

This over dependency has resulted into over exploitation and unsustainable utilization of forest cover and vegetation. It is estimated that over 44 million tonnes of woody biomass are consumed annually against an estimated sustainable yield of 26 million tonnes, thus eating into the available wood stock. This rapid depletion of wood stock is attributed to population pressure, over reliance on natural resources for economic survival, accelerated biomass energy needs and timber exploitation leading to environmental degradation and rural poverty.

The conversion of biomass into useful energy relies mainly on several traditional, inefficient technologies and practices. For example, charcoal production is still largely dependent on traditional earth kiln technology with conversion recoveries of less than 10%. Despite efforts to promote use of efficient utilisation technologies are is still dependence on inefficient technologies, these traditional technologies are not only wasteful and inefficient and expose the users to Indoor Air Pollution (IAP) which is a major health hazard in Uganda and in other least developed countries.

The biomass energy sub sector has a huge potential to contribute to the social-economic development of the country. Bio-energy also has the highest potential for expansion among renewable energy technologies, mainly because the technology is mature and is a relatively easy substitute for fossil fuels.

To improve on the sustainable utilization of the biomass resource in the country, several modern biomass technologies and fuels are being promoted and deployed by the ministry. They include the following:

- i. Biofuels production, blending and utilization in the thermal and motive energy sector;
- ii. Waste to energy technologies: biogas, gasification, briquetting technology for household, institution and large scale for power generation;
- iii. Improved biomass cooking technologies and fuels at household, SMEs and institutional level;
- iv. Improved biomass fuelled baking ovens and fish drying kilns;
- v. Sustainable charcoal production technology;
- vi. Promotion of Soil stabilized blocks to reduce the firewood demand for brick making.
- vii. Energy crop promotion for biofuels, firewood and charcoal feedstock.

Table 30: Biomass Resource Management Performance against NSI

Performance Indicator	FY2017/2018	FY2018/19	FY2019/20
Share of institutions using modern biomass cooking systems (numbers)	395	466	496
Proportion of biofuel in the petroleum blend	0%	0%	0%
Share of households using modern biomass cooking systems (numbers)	588,370	666,732	719,732
Contribution of Energy Crops to woody biomass feedstock (Acreage of energy crops)	4,490	2,686	2,686
Proportion of policy objectives implemented	8	8	9

4.1.2 Implementation Status of Biomass Resource Management Undertakings for FY 2019/20

Table 31: 4.2 Implementation Status of Biomass Resource Management Undertakings for FY 2019/20

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
Biogas Technology Promotion and Dissemination			
Conduct a detailed feasibility study on three sites for biogas electricity generation from municipal solid waste and waste water under the Biogas NAMA.	Procurement for the consultant to conduct detailed feasibility studies for electricity generation from municipal waste and waste water for Kiteezi, and National Water and Sewerage Corporation (NWSC) Nakivubo waste water treatment plant on-going.	There are few qualified technical experts to conduct technical assessment on industrial biogas plants	Capacity building for ministry staff, biogas artisans and technicians to study advanced courses in advanced design of bioenergy systems. Twining of foreign experts with the local team to build capacity of the local team too.
Establish ten (10) bio-latrines demonstration units in institutions for biogas generation.	Two bio latrines (20%) were constructed and are currently undergoing the finishing of the toilet stance	Insufficient funds to complete all the ten, bio latrines to lack of a development budget.	A project under development for promotion of the efficient use of biomass where bio latrines systems are

			under consideration
Develop a Bio-latrine Construction Manual.	Deferred due to lack of funds	Insufficient funds	To be considered in the project under development
Develop a strategy to promote biogas technology	Deferred due to lack of funds	Insufficient funds	To be implemented under the Biogas NAMA project in FY21/22
Stoves and efficient kilns			
Conduct a market study for household and institutional stoves.	Clean Cooking Sector market study conducted.		
Develop standards for the institutional improved cook stoves in collaboration with UNBS	A National Stove Standard (US: 761 – 2019) developed and popularized.		
Deploy 30 improved institutional cook stoves and 9 briquetting units	41 improved institutional cook stoves were constructed in 13 schools and 3 refugee reception centers		
Sustainable charcoal production –			
Promote and replenish biomass feedstock for charcoal and firewood production on 1000 hectares.	Data collected on the availability of land for raising biomass feedstock	Insufficient funds to support replenishing biomass for charcoal and firewood	
Deploy 100 improved charcoal production technologies.	Deferred due to lack of funds	Insufficient funds	New program being developed with FAO to enable roll out of casamance kilns and other improved charcoal technologies
Biofuels development			
Develop a roadmap and strategy for	A draft roadmap for biofuels roadmap and		

biofuels development;	strategy developed		
Acquire Biofuels testing equipment	Deferred due to lack of funds	Insufficient funds	To be considered in the project under development
Conduct feasibility studies for the establishment of mini-processing biodiesel and bioethanol units.	Terms of reference for study developed	Insufficient funds	
Cross cutting issues			
Develop an implementation plan for the sustainable energy refugee response plan;	A consultant recruited to support the development of the sustainable energy response plan (SERP) for refugees and host communities	The implementation was delayed due to COVID	Measures have been undertaken to go ahead with the development of the pan.
Develop awareness materials on modern biomass energy technologies	A consultancy firm was recruited to design an awareness campaign for the waste to energy technology. The activity is at 50% completion The Kyuusa Enfumba Yo Campaign is ongoing		
Train 12 technicians on modern biomass energy technologies	Deferred due to lack of funds		

4.1.3 Other Biomass Resource Management achievements in FY 2019/20

Development of Biofuels Regulations

The Ministry developed Draft Biofuel General Regulations (2020) to enable blending of biofuels (ethanol and biodiesel) with petroleum products (petrol and diesel) respectively by up to 5%. The Biofuel regulations give effect to the Biofuels Act, 2018 and specify the required feedstock to be used for production of biofuels as well as the licensing procedure among others. Sugar cane, sweet sorghum and cassava are candidate crops for bioethanol while jatropha, palm oil, castor and candle nut will be considered for biodiesel production.

Project for the Restoration of Livelihoods in the Northern Region (PRELNOR) PROJECT

The Ministry is providing technical backstopping to the Ministry of Local Government in the implementation of the Project for the Restoration of Livelihoods in the Northern Region

(PRELNOR). PRELNOR is an Agriculture Investment Project being financed by the International Fund for Agricultural Development (IFAD), and a grant from the Adaptation for Smallholder Agriculture Programme (ASAP) and the Government of Uganda. The project is being implemented in nine districts of northern Uganda (Agago, Adjumani, Amuru, Gulu, Lamwo, Nwoya, Omoro, Kitgum, and Pader).

In the FY 19/20 the project and achieved the following mile stones;

- i. Initiated a procurement for 30 improved institutional cook stoves of capacity 50, 100 and 150l and 200l.
- ii. Installed 20 solar institutional and trained the beneficiaries.
- iii. Disseminated 2,000 house hold cook stoves
- iv. Trained 50 artisans in the construction of house hold cook stoves.

4.1.4 Challenges to Biomass Resource Management performance

- i. The COVID 19 pandemic created delays in project implementation due to the lockdown that was imposed from April- June, 2020. As a result, activities such as field work, and stakeholder engagements were not concluded upon.
- ii. Biomass Energy Resource management is very limited due to very few staff and thin structure of the division in spite of the high potential for bioenergy in the country. There is need to recruit more staff and increase the staffing structure at the Ministry in order to increase output.
- iii. There is limited technical capacity among ministry staff (energy officers and senior energy officers) and stakeholders at large, such as engineers, artisans and contractors to design and rollout large scale modern bioenergy technology systems hence a need for dedicated capacity building by Government of Uganda.

4.1.5 Biomass Resource Management Plans and strategies for FY2021/22

Table 32: Biomass Resource Management Plans and strategies for FY2021/22

Intervention	Planned activities 2021/22
1. Biogas technology promotion	Procurement of an EPC contractor for the construction of 0.5MW Biogas Facility at Kiteezi Landfill
	Procurement of and EPC contractor for the construction of auxiliary equipment at Nakivubu Waste Water Treatment Plant to increase biogas yield
	Develop a strategy for scaling up access to biogas dissemination
	Develop a gender strategy and gender mainstreaming plan for waste to energy technologies which include biogas, briquetting and gasification technology
	Develop a standardized baseline for calculating greenhouse gas emission reduction from biogas electricity generation

2.	Biofuels development	Conduct detailed feasibility studies for the implementation of biofuels blending and development of a pricing model
		Pilot biofuel blending with sugar companies and oil marketing companies in Greater Kampala Metropolitan area
		Pilot the use of ethanol for cooking within Kampala Metropolitan area
3.	Improved cook stoves	Implement the Green Schools Nationally Appropriate Mitigation Action Program with climate financing;
4.	Institutional coordination	Provide technical backstopping to the Uganda National Alliance on Clean Cooking (UNACC) and BEETA.

4.1.6 Biomass Resource Management Investment Priorities for FY 2020/21

- i. Promote the raising of biofuel feedstock and production of biofuel from distilleries and biofuel refineries to enable blending of petroleum products to be used in the transport sector up to 20%;
- ii. Develop biofuel production, transportation and bulk storage and blending infrastructure
- iii. Promote increased generation of electricity through bagasse cogeneration, biogas and gasification technology;
- iv. Promote increased access to improved biomass cooking stoves and biogas technology.

5. OIL AND GAS

5.1.1 Introduction

The Oil and Gas subsector is guided by the National Oil and Gas Policy 2008 to sustainably explore and develop the Country's Oil and Gas resources.

The Ministry of Energy and Mineral Development through the Directorate of Petroleum is responsible for formulation and review of policy, legal and regulatory frameworks; continued promotion; exploration; licensing and sustainable exploitation and utilisation of the country's oil and gas resources and also ensure adequate, reliable and affordable supply of quality petroleum products for all sectors of the economy at internationally competitive and fair prices within the appropriate health, safety and environmental standards acquires petroleum data to guide licensing and promotion of the Country's oil and gas potential; develop and manages midstream petroleum infrastructure and regulates the downstream petroleum activities.

Furthermore, the Petroleum Authority of Uganda (PAU) and the Uganda National Oil Company Ltd (UNOC) are statutory bodies created by the Petroleum (Exploration, Development and Production) Act of 2013 to monitor and regulate the Oil and Gas and to represent government business interests in the Oil and Gas subsector respectively.

Detailed below is the implementation status of Oil and Gas value chain undertakings for the FY2019/20.

Table 33: Oil and Gas Subsector Performance against NSI

Indicator	2017/2018	2018/19	2019/20
Number of barrels of recoverable oil reserves	1.4bbl	1.4bbl	1.4bbl
Stage of development of oil Refinery	10%	20%	20%
Stage of development of crude oil export pipeline	30%	40%	40%

5.2 Upstream Petroleum

The Upstream petroleum subsector involves activities related to petroleum exploration, development and production. During the year under review, the Department commenced preliminary geological and geophysical surveys in the Kadam-Moroto basin, launched the second licensing round, undertook basin analysis and resource assessment, developed upstream standards, monitored land acquisition in Tilenga and Kingfisher projects, and supported the implementation of the National Content Policy and developed Terms of reference for review of the National Oil and Gas Policy among others. Detailed below is the performance of the Upstream Petroleum subsector for the FY2019/20.

5.2.1 Implementation Status of Upstream Petroleum Undertakings for FY 2019/20

Table 34: Implementation Status of Upstream Petroleum Undertakings for FY 2019/20

Agreed Undertakings	Progress of undertakings	Challenges	Measures to Mitigate challenges
Promotion of the Country's Petroleum Potential and Licensing	181-line km of geophysical data acquired and over 1400 km ² of geological and geochemical mapping undertaken in Kadam-Moroto basin	Extreme weather conditions and poor accessibility to some areas	Undertake surveys during dry seasons only
	Three (3) road shows were held in London, Houston and Dubai. Continued promoting the round through international media and press as part of the Second Licensing Round.	Covid-19 pandemic led to delays in the process.	Deadline for submission of applications in the Pre-qualification stage was extended to 30 th September 2020.
	The country's petroleum potential was promoted at the Africa Oil Week conference held in November, 2019 in Cape Town, South Africa.		
	Inception, Interim and final draft report for ESIA of new frontier basins were reviewed and submitted.		
	The Annual Resources Report for period 2018/19 indicating the country's annual resource assessment for all fields, discoveries and prospects in the Albertine Graben was		

	compiled.		
Initiate and Formulate Petroleum Policy and Legislation	Terms of Reference (ToRs) for the Regulatory Impact Assessment of the NOGP developed		
	Nine (9) upstream standards on ... were developed bring the total to 77 upstream standards.		
	The M&E database project was accomplished in FY 2017/18 and the system is in place on the PEDPD Server. Populating the M and E database for the NOGP with the relevant data continued.	Multi-institutional participation needs for data compilation.	A steering committee with key stakeholder representation to ensure participation and data reporting should be formed.
Capacity Building for the Oil and Gas Sector	The Department received three (3) new staff members; i.e. two (2) Geophysicists and one (1) Palynologist. One (1) staff continued her MSc. in Petroleum and Energy Economics. At least 10 short courses undertaken by various staff members.		
Continue to Implement the National Content Policy.	Translated both the upstream and midstream local content regulations into seven local languages (Luganda, Ateso, Runyoro, Alur, Lugbar, Lugisu and Lusoga) Supported the training	COVID-19 pandemic lock down restricted movement and gathering hence affecting the planned workshops.	Need to engage Persons with Disabilities over the upcoming opportunities in the sector

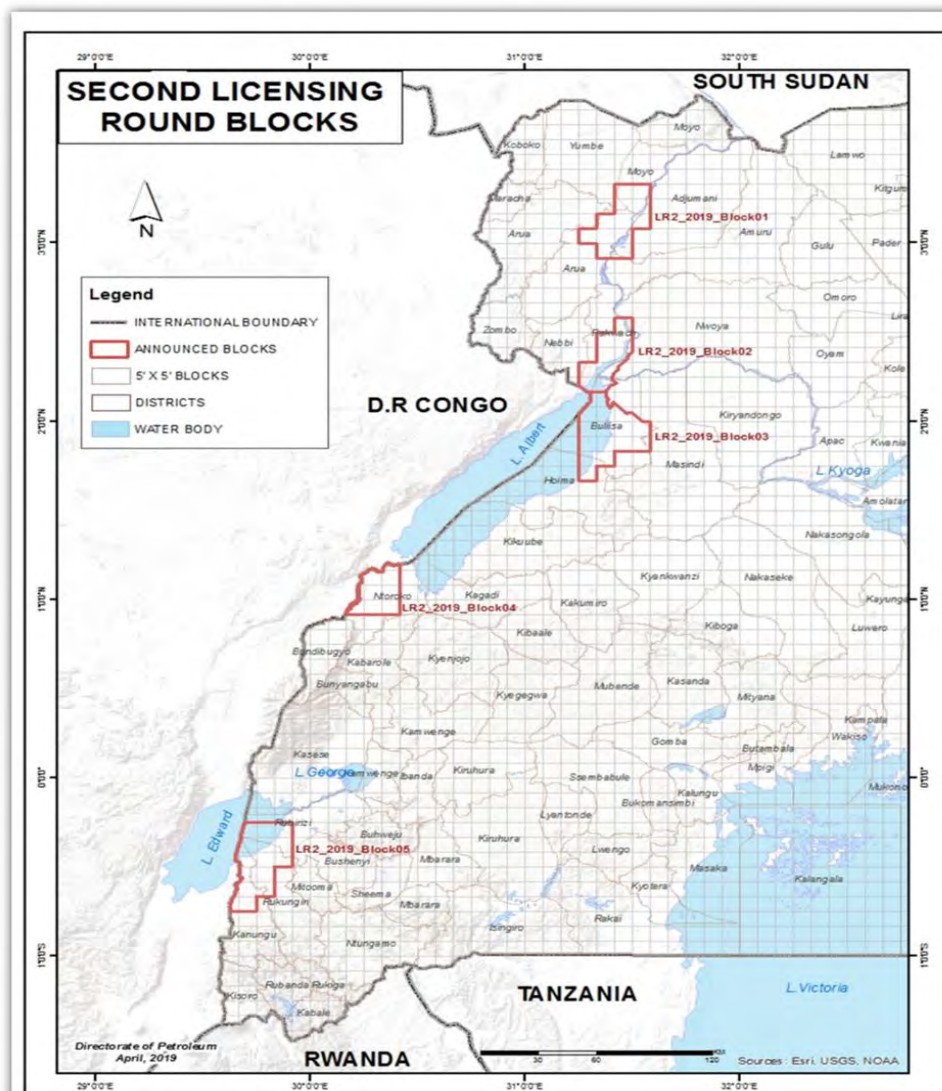
	<p>of over 1500 youth in skills for construction in partnership with the E4D programme.</p> <p>Monitoring and Evaluation system for the Local Content Policy developed</p> <p>Supported the training of 158 Heavy Goods drivers inclusive of 19 driving instructors and 2 master trainers were trained in partnership with the E4D programme under the Professional Drivers Training Uganda (PDTU) project</p> <p>Supported the HSE training programme in which 30 companies were trained and coached in HSE standards and practices. The outputs of the training were NEBOSH and ISO 45001 certification</p> <p>Local content steering committee established</p>		
<p>Continue to oversee and supervise Upstream petroleum activities such as land acquisition and review of FDPs</p>	<p>Daily monitoring and monthly supervision of petroleum field activities undertaken.</p> <p>Continued supervision of Resettlement Action Plan (RAP) for TILENGA project that stands at the following stage:</p> <p>(i) RAP 1 (industrial</p>	<p>Low staffing of the department hence the workload is immense for the available staff. COVID-19 pandemic lock down resulted in making to some</p>	<ul style="list-style-type: none"> - Need to fast track the filling up of the department approved structure to ease on the workload. - Providing more funding to the department.

	<p>area and access roads) which is 99% complete;</p> <p>(ii) RAP 2 & 4 (3 Ngiri well pads, 3 Kasamene - Wahrindi well pads, 1 Water Abstraction Unit, Flow lines, Access roads) that is 80% complete; and</p> <p>(iii) RAP 3, 3B & 5 (2 Ngiri well pads, 4 Gunya well pads, Flow lines, Access roads) that is 80% complete.</p> <p>A progress report on re-evaluation of Omuka Exploration block, with a view of establishing additional prospects and leads was made.</p> <p>Review process of Kingfisher Development Area Petroleum Reservoir Report (PRR) and FDPs submitted by Tullow Oil on Kasamene-Wahrindi, Kigogole-Ngara and Nsoga production licenses still ongoing.</p> <p>The review process for Reservoir Management Plan for Tilenga still ongoing.</p>	<p>of land acquisition activities halted.</p>	
<p>Upgrade existing geochemistry laboratories</p>	<p>Procurement process for the consultant to review and equip the lab has commenced.</p>		
<p>Implementation of the strategic environment assessment for the oil</p>	<p>Participated in the review for ESIA for Tilenga and KFDA</p>		

and gas in the Albertine Graben	projects. Participated in the review of ESIA for EACOP and Buliisa Feeder pipeline.		
Participate in Regional Initiatives	A team constituted of membership from MEMD, PAU and UNOC participated in a bench marking visit to Equatorial		
Gov't Buildings and Administrative infrastructure	Construction of the New Office and Data Repository Centre progress to 80%	Delay in clearing the Contractors' payments and approval of variations due to limited budget.	Improved and timely budget releases. Expedite Phase 3 construction and the accrued payments. Plan to complete by December 2020.

5.2.2 Challenges to Upstream Petroleum performance and measures undertaken to remedy

- i. Low Staffing levels.
- ii. Pro-longed processes of land acquisition for project development
- iii. Harmonization of the legal and regulatory framework to create a conducive environment for business/ investment.
- iv. The COVID-19 pandemic has affected the Sub sector in the following ways;
 - Restriction of inland travel led to a reduction in demand for all petroleum products during the months of lockdown.
 - Crude oil prices suffered the sharpest fall in close to 30 years during March 2020. The price of crude oil price (Brent) ranged between US\$ 25 - 28/barrel in March 2020, and is currently at about US\$ 42/barrel. This was due to, among other reasons, the global restrictions on travel that led to a sharp decline in demand for refined products.
 - Effect on the Second Licensing Round as no travels could be undertaken by potential investors.
 - Assessment of the petroleum potential in the frontier areas was affected due to travel restrictions
 - Slowdown in discussions leading to the Final Investment Decision. The onset of COVID and the consequent travel restrictions has affected the pace of the on-going discussions with the International Oil Companies who are currently not in position to travel for physical meetings.



Picture 10: Five blocks in the 2nd Licensing Round.



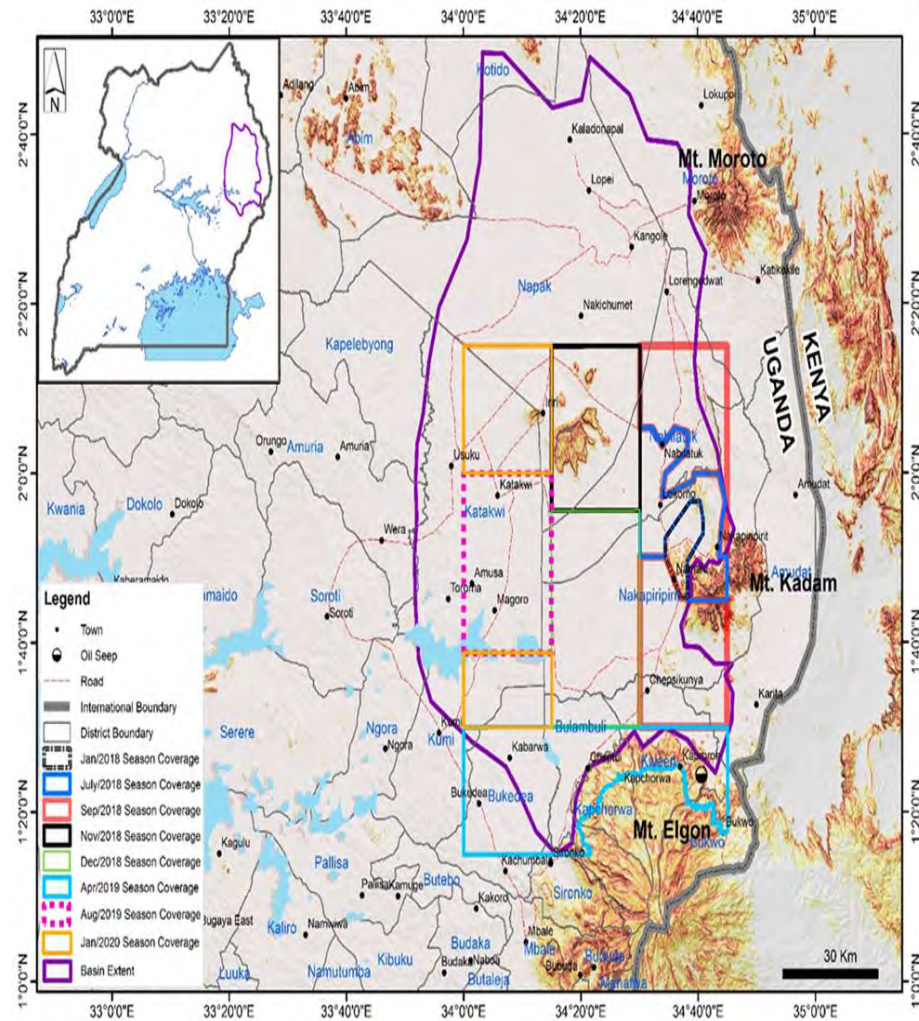
Picture 11: The Hon. Eng. Irene Muloni delivering a presentation on status of the Petroleum Exploration and investment opportunities in Uganda to the potential investors at London Roadshow on 14th October 2019



Picture 12: Mr. Robert Kasande, the Permanent Secretary delivering a presentation on prospectivity of the five blocks up for the second licensing round to the potential investors in Houston, Texas Roadshow on 17th October 2019.



Picture 13: Mr. Frank Mugisha, Acting Commissioner and the licensing Manager (left) delivering a presentation on the second Licensing Round Requirements and Key Stages of the process to participate



Picture 14: Location map of the Moroto-Kadam basin showing the data coverage

5.2.3 Upstream Petroleum Plans and strategies for FY2021/22

- i. Undertake further exploration in frontier basins
- ii. Review of the National Oil and Gas Policy and commence update of pertaining laws and regulations to address the entire petroleum value chain and other emerging issues.
- iii. Undertake resource assessment and basin analysis in the Albertine graben and frontier basins
- iv. Development of model agreements for speculative geophysical surveys in frontier basins and underexplored parts of the Albertine Graben
- v. Conclude the second licensing round with possible granting of exploration licenses.
- vi. Develop additional upstream standards.
- vii. Enhancement of existing laboratory at the Directorate of Petroleum to cater for entire oil and gas sector.
- viii. Monitor and supervise land acquisition for the Tilenga and Kingfisher projects.

5.3 Midstream Petroleum

The Midstream subsector is mandated to promote, monitor and regulate petroleum refining, gas conversion, storage and bulk transportation. The Department continued the supervision of the FEED for the Refinery development and negotiation of key project agreements for the refinery and EACOP development, development of the natural gas pipeline from Tanzania to Uganda and planning for development of bulk storage facilities. Below is the detailed performance of the subsector for the FY2019/20.

5.3.1 Implementation Status of Midstream Undertakings for FY 2019/20

Table 35: Implementation Status of Midstream Undertakings for FY 2019/20

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
Undertake the Feasibility Study for the Natural Gas Pipeline Project from Tanzania to Uganda	The Joint Technical Committee (JTC) has developed the following draft documents which will be used in the execution of the Joint feasibility study and other related project activities; <ol style="list-style-type: none"> i. Joint Operating Strategy ii. Draft Joint Procurement and Disposal Rules and iii. Intergovernmental Agreement (IGA)/Bilateral Agreement These documents are to be	Inadequate responsiveness from the Government of the United Republic of Tanzania and the COVID-19 travel restriction that affected movement across borders.	The Minister of Energy and Mineral Development has written to her colleague in Tanzania to intervene and call for the 3 rd JTC meeting in a bid to progress the project The option of a virtual online meeting has been

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
	discussed at the 3 rd Joint Technical Committee meeting. Once approved by the Joint Steering Committee (Meeting of Permanent Secretaries) and Joint Project Committee (meeting of Ministers), then the process for procurement of a consultant to carry out the feasibility study shall commence.		proposed to the Government of Tanzania but it is yet to revert. MEMD plans to carry out individual complimentary studies that will feed into the final study in the event that Government of Tanzania does not respond as fast as expected.
Continue the promotion and development of the Crude Oil Export Pipeline.	Following the progress made in the negotiations of the Tullow farm out transaction, negotiations for the Host Government Agreement (HGA) resumed in June 2020. There have been five (5) rounds of virtual online negotiation meetings held between the representatives of Government institutions and the International Oil Companies (IOCs) and significant progress has been made. The Ministry has also continued to participate and support internal preparations for negotiation of the Shareholding Agreements (SHA) and Tariff and Transportation Agreements (TTA). Statutory Instrument for Early Project Activities for Pipelines; The Petroleum (Refining,	Suspension of project activities by the Project lead sponsor, TOTAL following the expiry of the Farm Down transaction by Tullow in August 2019. Limited field activities and physical interactions between the government, project sponsors, stakeholders and Project Affected Persons due to the COVID-19 pandemic. Delayed commencement of payment of compensation	GOU together with the upstream Joint Venture partners have continued to engage and are in advanced stages of finalizing the Tullow farm out transactions. This progress has led to the resumption of activities such as negotiations. Adoption of virtual online meetings to minimize physical interactions. Field activities to resume while following the Ministry of Health guidelines on COVID-19. TOTAL is being engaged on

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
	<p>Conversion, Transmission and Midstream Storage) (Amendment) Regulations, 2020 was gazetted pursuant to the consent judgement entered between government and Total Midstream B.V to facilitate the execution of EACOP early project activities.</p> <p>Environmental and Social Impact Assessment; The Environment and Social Impact Assessment for EACOP was completed and submitted to NEMA for approval. The Ministry together with its agencies, NEMA and Total organized ten (10) consultation meeting, one in each of the affected districts and three (3) public hearings in Kakumiro, Mubende and Rakai Districts. The Ministry continues to participate and support this process until the final approvals.</p> <p>Front End Engineering Design (FEED) The Front-End Engineering Design (FEED) study was submitted by TOTAL E & P to Government of Uganda for approval. The ministry participated in the review of the FEED submission together with its agencies of Petroleum Authority of Uganda (PAU) and Uganda National Oil Company (UNOC).</p>	<p>which is causing anxiety among the PAPs.</p>	<p>commencement of the compensation process</p>

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
	<p>Supervision of the Land acquisition process</p> <p>The Ministry continued to supervise, support and participate in the following activities geared towards acquisition of the land for the Right of Way of the EACOP;</p> <ul style="list-style-type: none"> • Mop up surveys for the Pipeline, camps, material yards and access roads across the 10 districts of Hoima, Kikuube, Kakumiro, Kyankwanzi, Mubende, Gomba, Sembabule, Lwengo, Rakai and Kyotera. • Valuation Reports; The Ministry facilitated and conducted a multi institutional review of 13 Valuation reports that were submitted by Total. The institutions that participated in the review included Ministry of Lands, Housing and Urban Development (MLHUD), Ministry of Water and Environment (MWE), Petroleum Authority of Uganda and Uganda National Oil Company. The 13 valuation reports are for; Kikuube, Hoima, Kyankwanzi, Kakumiro, 		

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
	<p>Mubende, Gomba, Sembabule, Lwengo, Rakai and Kyotera Districts in addition to Camp 2 and its access road (Mubende District), Camp 3 and its access road (Sembabule District) and Camp 4 and its access road (Kyotera District).</p> <p>The reports were submitted with the comments to Ministry of Lands, Housing and Urban Development for final advice and approval.</p> <ul style="list-style-type: none"> • Sensitization of PAPs at all levels along the pipeline from the district to the village level. Phased District Sensitizations were carried up in Mubende, Kyotera and Rakai until they were suspended due to the COVID-19 lockdown. Sensitization of district Chairpersons was also undertaken in Kampala. • Title rectification; during the cadastral survey it was found that a number of titles did not correspond with the physical boundaries and therefore no valuation could be done before the title 		

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
	<p>rectification. A total of 370 titles need rectification and of these, 328 titles were rectified. The remaining 42 titles are mainly absentee landlords and PAPs that need more engagement in the next Financial Year.</p> <ul style="list-style-type: none"> • Forests and Woodlots assessment; an assessment of all forests and wood lots along the entire pipeline route was carried out led by National Forestry Authority (NFA) and a report was submitted • Gazettement of the EACOP corridor; the Ministry working with the Ministry of Lands, Housing and Urban Development together with the Office of the Attorney General gazetted the EACOP corridor in November 2019. • The Ministry applied and received Approval of Change of Land Use for the East African Crude Oil Pipeline from the Minister of Lands, Housing and Urban Development as per 		

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
	Section 6(2) of the Physical Planning Act, 2010.		
Continue the development of standards, codes and guidelines for midstream facilities and operations	<ul style="list-style-type: none"> Deliberated on six (6) standards under the Technical Committees led by the Uganda National Bureau of Standards (UNBS). A familiarization visit to the Albertine Graben was undertaken by one of the Technical Committee to aid the standards development process. 	There was a delay in formation of the joint technical team by the UNBS which affected the development process for the standards, codes and guidelines. For the 2 nd half of the year, the COVID-19 pandemic led to the suspension of all meetings and as such the team was unable to meet and carry out this activity.	The Possibility of the Technical Committee conducting online meeting is under consideration.
Negotiate bilateral agreements for the Natural Gas Pipeline;	The Ugandan part of the Joint Technical Team (JTC) developed a draft Bilateral Agreement for the development of the Natural Gas Pipeline. The draft was shared with the Ministry of Justice and Constitutional Affairs (MoJCA) for review before submission to Tanzania for consideration in the 3 rd Joint Technical Committee meeting.	Awaiting input from the Ministry of Justice and Constitutional Affairs	Follow up discussions have been held with MoJCA to finalize the draft agreement.
Supervise FEED and ESIA for the Refinery Development	The Front-End Engineering Design (FEED) commenced in March 2019 and is ongoing at about 75% complete. The ESIA	The pandemic has significantly slowed down the progress of the	The Ministry has continued to discuss with the Consortium to

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
	<p>commenced in March 2020 and is currently ongoing. The Investor requested for review of the implementation timelines in the PFA to enable completion of the FEED and ESIA, among others. Consequently, government and the investor successfully negotiated during March 2020 and agreed to extend the PFA by 17 months. This extension was approved by Cabinet. The amended PFA was consented by the investors and the GOU and is being implemented as per the amendment.</p>	<p>FEED and the ESIA process</p>	<p>ensure that the stipulated timelines for all deliverables within the PFA are met.</p>
<p>Implementation of the constructions of buildings under the social infrastructure as part of the RAP in the refinery development.</p>	<ul style="list-style-type: none"> • The construction of two churches, i.e. the Anglican Church of Uganda at Wambabya and St. Francis Catholic Church at Nyakasini. was successfully completed in July 2019. The Churches were handed over to the respective Dioceses on 21st November 2019. • Four boreholes were drilled and installed in the Kyakaboga resettlement village. These boreholes were successfully tested and completed on 24th September 2019. The boreholes were handed over to the PAPs on 2nd October 2019 • Installation of electrical fixtures at Kyakaboga commenced in May 2019 and 	<p>Unavailability of some construction materials has delayed the completion of the police post project</p>	<p>The Ministry has continued to engage the contractor to ensure that all the required materials are delivered on site.</p>

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
	<p>was completed in March 2020</p> <ul style="list-style-type: none"> • Construction of a police post at the Kyakaboga resettlement village is currently ongoing and is estimated to be 75% complete 		
<p>Support Engineering Procurement and Construction Management (EPCm) team during the development of the East African Crude Oil Pipeline (EACOP) Project.</p>	<p>The Ministry continued to monitor and participate in the EPCm activities until the time of their suspension in September 2019. The activities supervised and participated in included; Validation of the Front-End Engineering Design (FEED), Design optimizations as agreed in the FEED validation, preparation of technical datasheets for procurement, Early Civil Works designs and Value Engineering of the design among others.</p>	<p>Suspension of project activities by the Project lead sponsor, Total following the expiry of the Farm Down transaction by Tullow in August 2019.</p>	<p>GOU together with the upstream Joint Venture partners have continued to engage and are in advanced stages of finalizing the Tullow farm out transactions, following which the negotiations of the EACOP Project agreements will resume.</p>
<p>Continue development of human resource for the Department.</p>	<p>One officer is undertaking a long-term training in MSc. Advanced Process Integration and Design at the University of Manchester in the United Kingdom.</p>	<p>Insufficient funds released that could not support the training of additional staff.</p>	<p>Continued to engage the Ministry of Finance, Planning and Economic Development to release additional funds for training.</p>
<p>Continue the implementation of RAP for the Products Pipeline Corridor from the Refinery at Kabaale to the Storage Terminal in Mpigi district</p>	<ul style="list-style-type: none"> • The Ministry continued to supervise the activities being undertaken by the Consultant, Strategic Friends International (SFI) on the Resettlement Action Plan study for the 213 km long refined products pipeline wayleave 	<p>Delayed issuance of compensation rates by some districts.</p>	<p>Ministry engaged the districts and their respective land boards to prioritize issuance of updated compensation rates. Use of</p>

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
	<p>from Hoima to Namwabula, Mpigi. Several stakeholder engagements and sensitizations were conducted in the affected districts before the onset of the COVID – 19 pandemic.</p> <ul style="list-style-type: none"> • The Consultant submitted the draft valuation reports for the seven (7) districts of Hoima, Kikuube, Kyankwanzi, Kiboga, Mityana, Mpigi and Wakiso that were reviewed by the Ministry. • The reports were updated taking into consideration comments raised by the Ministry and resubmitted onward submission to the Chief Government Valuer (CGV) in the Ministry of Lands, Housing and Urban Development (MLHUD) for advice and approval. 		<p>compensation rates of neighboring districts. This was done in consultation with the Chief Government Valuer in the Ministry of Lands, Housing and Urban Development.</p>



Picture 15: The State Minister for Bunyoro Affairs, Hon. Ernest Kizza presided over the handing over of the Churches in November 2019



Picture 16: Environment Social Impact Public Hearing for the EACOP Project



Picture 17: The Minister, Hon. Maria Goretti Kitutu Kimono, leading a GoU team during the negotiation of the amendment to the PFA with the Albertine Graben Refinery Consortium



Picture 18: EACOP Project Valuation Reports Review Workshop amongst government institutions

5.3.2 Midstream Petroleum Plans and strategies for FY2021/22

- i. Develop petroleum refining, pipeline transportation, and bulk storage infrastructure.
- ii. Enhance the capacity building of staff and institution in the oil and gas sector.
- iii. Promote, implement and monitor the establishment of Midstream petroleum infrastructure development.
- iv. Strengthen the legal, regulation and institutional framework for Midstream Petroleum.
- v. Continue with the participation in the regional initiatives in the oil and gas sector

5.4 Downstream Petroleum

The Petroleum Supplies Department regulates the downstream sub-sector to ensure that the petroleum supply in the country is adequate, reliable, efficient, and economical. During the year under review, the Department performed as follows.

5.4.1 Implementation Status of Downstream Petroleum Undertakings for FY 2019/20

Table 36: Implementation Status of Downstream Petroleum Undertakings for FY 2019/20

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
Promote mass awareness of LPG usage	<ul style="list-style-type: none"> • LPG detailed feasibility study was conducted and the Report is in place. • One LPG regional awareness training conducted 	The Covid-19 pandemic cut short all awareness training programs that were lined up in 3 rd and 4 th Quarter 2019/2020	To carry out a communication audit to guide in National LPG awareness campaign
Promote Usage of blended bio fuel products.	<ul style="list-style-type: none"> • Biofuel Regulation in final draft form • Biofuel analytical and operational modals studies not undertaken 	<ul style="list-style-type: none"> • Funds to undertake activity not released • The current global restrictions on local and international travels due to covid-19 	Carry out industrial consultation with producers of biofuel energy and blending agencies on operational modalities

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
Promote alternative transportation of refined petroleum products.	Lake transport infrastructure developments monitored and supervised at Bugiri-Bukasa port and developments of Jetty at 62%as at 3/6/2020	The unit manpower transited to sister agency UNOC and lacked manpower to follow up on regulations development.	An officer has since been recruited and will initiate development of water transport regulations
Promotion development of petroleum infrastructure standards	<ul style="list-style-type: none"> • Hydraulic lubricating, Engine oils, lubricants an industrial lubricants standard are being developed but in d0raft form. • LPG standards and codes of practice are also in draft form (LPG installations, grill, burner and bulk transportation by rail) • One standard awareness training was conducted in Northern Uganda- Gulu Town 	Lack of funds for standards development meetings	Request for funds for the activities
Continue institutional capacity building	<ul style="list-style-type: none"> • Two Staff undertaking master’s studies ... • Two staff undertook short courses in Oil and Gas studies 		

5.4.2 Other Downstream Petroleum achievements in FY2019/20

Monitoring and Inspection

Petroleum facility monitoring and inspection was carried out by the Department as mandated by the law governing the downstream petroleum sub sector and in accordance

with the Departmental Work Plans for Financial Year 2019/20 to ensure compliance to all set industry standards and regulations. The specific objectives of monitoring and inspection are to ensure that the industry in accordance with the Petroleum Supply Act 2003 and the Petroleum Supply (General) Regulations 2009 is well regulated as far as health, safety, environment, fair competition, standards and ensuring good business practices in the country are concerned.

The monitored facilities during the FY 2019/20 were 454 much lower than the yearly average of 600 facilities annually. The activities of inspection were affected by the Covid-19 pandemic. Further, the results from the inspection indicate that there has been continued violation of Health, Safety and Environmental (HSE) aspects by facility operators who continue to operate in total disregard of these key aspects. Some facilities are operating below the bare safety minimum of having well serviced fire extinguishers. A big number have un-serviced expired fire extinguishers and many operators have not trained their staff members on how to operate firefighting equipment.

Enforcement of Petroleum laws

The enforcement team, guided by the Petroleum Supply Act (2003), the Petroleum Supply (General) Regulations (2009) and the Petroleum (Marking and Quality Control) Regulations (2009) and in accordance with the feedback from monitoring and inspection plans, carried out enforcement action against illegal downstream petroleum retail outlets being constructed and operating illegally. One hundred thirty-nine (139) retail outlets were covered in the enforcement exercise. Most of these outlets were closed for participating in continued illegal operations and urged to regularize their operations accordingly. Some of the closed facilities were habitual offenders who have been advised before to regularize their operations. Other offenders are mainly new entrants who construct retail outlet facilities without obtaining the requisite permits. Other closed facilities were retail outlets whose licenses had expired and require renewal.

Stakeholder's workshop and sensitization/ awareness campaign

Three two days' workshop were organised by the Department in the FY 2019/20 in Western, Eastern and Northern Uganda. The purpose of the workshops was to sensitise the stakeholders about the downstream petroleum legislations and retail facility standards and activities of PSD. The participants comprised petroleum operators and representatives from the Local Governments. The main objective was to sensitise local government leaders about the updated standard US 947-1:2019 (Handling of petroleum products, quality and their derivatives during construction and operation of the petroleum facility).

Licensing

During the reporting period, the Department continued to streamline the licensing regime under the Petroleum Supply Act 2003 and General Regulations of 2009. In the same period, a total of one hundred twenty (120) companies were issued with Petroleum Operating Licenses and one hundred forty-nine (149) Petroleum Construction Permits were issued.

Eighty (80) Construction Completion Certificates issued to developers of petroleum facilities in the country. In addition to the above two hundred nine (209) Environmental Impact Statement (EIS) reports were reviewed and recommendations sent to NEMA.

Transport and Storage

The transportation of refined petroleum products on Lake Victoria is being fast tracked by both governments of Uganda and Kenya. This will lead to use of cheaper, reliable and safer mode of fuel transportation of imports. Mahathi infra, a private developer is putting up a jetty, storage tanks and vessels at Bukasa- Bugiri port on Lake Victoria shore line and is at 62% completion. The tank foundation, welding shop and staff quarters are complete. Parts for ship materials pre-fabricated are already on-site pending joining.

5.4.3 Downstream Petroleum Plans and strategies for FY2021/22

Table 37: Downstream Petroleum Plans and strategies for FY2021/22

OUTPUTS	PERFORMANCE INDICATOR	TARGET FOR FY 2021/22
Implement LPG national awareness campaigns	<ul style="list-style-type: none"> • Number of LPG mass awareness campaigns conducted • Institutional LPG Safety training programs conducted • Number of LPG cylinders and free starter kit distributed to citizens • Acquire land for central LPG storage bottling plant 	<ul style="list-style-type: none"> • Reports on mass awareness campaigns • 6 institutional safety trainings • Number of LPG cylinders and free starter kits distributed • Kampala LPG storage terminal site acquired
Promote Use of Railway and Water transport for petroleum products	Acquire specialized petroleum products rail wagons	Number of specialized rail wagons in use
Continue promotion of blended bio fuel products	<ul style="list-style-type: none"> • Roll out national use of bio fuel blended products • Awareness training on biofuel blended products conducted in 4 regions of Uganda • Participate in development of biofuel product and blending infrastructure standards 	<ul style="list-style-type: none"> • Training reports • Biofuel standards developed
Standard operating procedures and regulations	<ul style="list-style-type: none"> • Number of standard 	<ul style="list-style-type: none"> • Reports

for transportation of petroleum products on Lake and Rail developed and implemented	<p>operating procedures developed and implemented</p> <ul style="list-style-type: none"> Participate in development of Regulations for transportation of petroleum products on the Lake and rail 	<ul style="list-style-type: none"> Regulations in place
Promote development of Petroleum Infrastructure Standards	<ul style="list-style-type: none"> Participate in development of selected Petroleum Infrastructure standards and codes of practice 	<ul style="list-style-type: none"> Number of draft petroleum standards and codes prepared
Continue Institutional Capacity building	<ul style="list-style-type: none"> Training staff in short- and long-term courses Participate in regional Initiatives 	<ul style="list-style-type: none"> 2 staff trained Meetings attended

5.5 Petroleum Authority of Uganda

5.5.1 Implementation Status of PAU Undertakings for FY 2019/20

Table 38: Implementation Status of PAU Undertakings for FY 2019/20

Agreed Undertaking 2019/2020	Progress of undertakings	Challenges	Measures to Mitigate challenges
<p>Enable more exploration to increase resource base;</p> <ul style="list-style-type: none"> Monitor the acquisition of 2D seismic data in Ngassa and Kanywataba Contract Areas. Monitor exploration drilling in Ngassa and Kanywataba Contract Areas. 	<ul style="list-style-type: none"> The authority finalised the interpretation of 160 line-km of reprocessed 2D, Vintage 250km² of 3D and newly acquired 326 line-km of 2D seismic data over the Ngassa Contract Areas. Results: at P50 the estimated recoverable crude oil was 61.6 mmbbl (43.4 mmbbl from Ngassa East prospect and 18.2 	<ul style="list-style-type: none"> Force Majeure declared during 2D seismic survey in Kanywataba Contract Area due to heavy rain and flooding in the area, affected the activity progress. Delay by the licensees to meet the conditions for renewal of the Petroleum 	<p>Remind for licensees to comply with the laws and regulations</p>

Agreed Undertaking 2019/2020	Progress of undertakings	Challenges	Measures to Mitigate challenges
	<p>mmbbl from Ngassa West prospect) and a total of 0.58BCF of gas resources located in Ngassa East Block.</p> <ul style="list-style-type: none"> • Evaluated Kanywataba Annual Resources Report submitted by Armour Energy Limited to be incorporated into the Petroleum Resources report for 2020. • Monitored the 2019 work programmes and budgets with Exploration Licensees and approximately 95% of approved 2019 work program was implemented • Reviewed all technical reports from Ngassa and Kanywataba Contract Areas (G & G reports, Progress report for Basin modelling study, 2D seismic survey program, daily, weekly, monthly, quarterly and Annual reports, AVO 	<p>Exploration Licenses also affected the implementation of petroleum activities.</p>	

Agreed Undertaking 2019/2020	Progress of undertakings	Challenges	Measures to Mitigate challenges
	<p>analysis report and AVO seismic data volume, lake drilling solution study report).</p> <ul style="list-style-type: none"> Reviewed the FDP/PRR for Jobi East and Mpyo Fields, with Norwegian Petroleum Directorate and MEMD. Reviewed Oranto Petroleum Limited (OPL) 2020 Work Programme and Budget. Finalized classification of the resources and commenced compilation of Petroleum Resources Report for the 2019/2020. 		
<p>Facilitate, monitor and regulate commercialisation of discovered oil & gas resources;</p> <ul style="list-style-type: none"> Review detailed engineering design for upstream facilities Monitor 	<ul style="list-style-type: none"> The Authority conducted 04 Operational meetings for Tilenga Project. Reviewed 01 annual (2019) report, 03 quarterly progress reports and 10 monthly progress reports for the KFDA & Tilenga Project. 	<ul style="list-style-type: none"> The outbreak of COVID – 19 pandemic which led to the world lockdown affected most of the activities which were planned for March – June 2020. One (1) COVID- 	<ul style="list-style-type: none"> Ensure the operators in the sector follow the Presidential directives and MOH guidelines Advocate for additional capital budget for geoscience

Agreed Undertaking 2019/2020	Progress of undertakings	Challenges	Measures to Mitigate challenges
<p>engineering, procurement, construction of the upstream facilities</p> <ul style="list-style-type: none"> • Evaluate Reservoir Management Plans for fields under development and production • Review and update static and dynamic models for the fields under development • Monitor development drilling activities 	<ul style="list-style-type: none"> • Reviewed the Tilenga Annual Resources/Reserves Audit Report and the Annual resources reports from all the licensees. • Reviewed 85% of the Drilling and Completions technical reports submitted by TEPU and CNOOC. • Reviewed Tullow Annulus Gas Samples Analysis report for LA2 well integrity campaign. • Reviewed Tilenga and KFDA Projects Reliability Availability and Maintainability (RAM) Studies reports. • Undertook the following internal technical researches; i) Geo-steering study involving the interactive use of real time geological and directional information ii) Potential use of Stick Diagrams iii) 	<p>19 case was registered in Bugungu camp.</p> <ul style="list-style-type: none"> • Inadequate software to validate reports submitted by the licensees. • Challenges in land acquisition are slowing project implementation mostly speculation and escalation of the land prices and land disputes for Kingfisher, Tilenga and EACOP project 	<p>software acquisition</p>

Agreed Undertaking 2019/2020	Progress of undertakings	Challenges	Measures to Mitigate challenges
	<p>Crude oil emulsion for Tilenga and KFDA iv) Factors which affect oil well performance, artificial lift system design for Tilenga and KFDA projects.</p> <ul style="list-style-type: none"> • Reviewed the Metering designs for upstream submitted by the Oil Companies. • Completed evaluation of updated Petroleum Resource Reports (PRRs) for Jobi-Rii and Ngiri fields. • Completed validation of reservoir models for Tilenga, KFDA, Jobi-Rii and Ngiri fields. • Reviewed the Flow Assurance and Process Models for KFDA • Reviewed several process and civil engineering technical documents for Tilenga and KFDA Front End Engineering Designs. • Reviewed 		

Agreed Undertaking 2019/2020	Progress of undertakings	Challenges	Measures to Mitigate challenges
	<p>Geophysical and Geotechnical (G&G) survey reports for the Tilenga and KFDA projects,</p> <ul style="list-style-type: none"> • Developed guidelines for Drilling and Well operations • Undertook Compliance Assessment for LA-2 for FY 2018 and 2019. • Engaged Total Uganda regarding the new Engineering Procurement Supply Construction and Commissioning (EPSCC) contracting Strategy. 		
<p>Enhance the impact and sustainability of the upstream and midstream petroleum sub-sector</p> <ul style="list-style-type: none"> • Engagement of all stakeholders for support and effective participation in the oil and gas sector • Establish and maintain database of petroleum 	<ul style="list-style-type: none"> • The authority coordinated the 2nd National Content Conference which attracted 450 delegates • Organized 2 supplier development workshops. • The Authority conducted quality checks and improvement of the economic 	<p>High stakeholder expectations from the sector</p>	<ul style="list-style-type: none"> • Improve stakeholder engagement and communication • Establish a Regional Offices

Agreed Undertaking 2019/2020	Progress of undertakings	Challenges	Measures to Mitigate challenges
<p>resources and ensure use of appropriate technologies and best practices in all operations</p>	<p>models for Tilenga, Kingfisher, EACOP and Refinery to evaluating fiscal terms and to understand the Economics of the projects.</p> <ul style="list-style-type: none"> • Evaluated the impact of the delay in FID, changes in the Fiscal terms, price fluctuations, and ascertained the fiscal risks that required intervention through amendment of the domestic tax act. • Reviewed the 2020 budgets for the licensed areas for which the companies submitted total of approximately US\$74 million and US\$ 53 million was approved. • Evaluated six (6) additional budget requests for CA1 amounting to US\$199,000 and nine (9) Bid Evaluation Reports for contracts 		

Agreed Undertaking 2019/2020	Progress of undertakings	Challenges	Measures to Mitigate challenges
	<p>amounting to US\$769,000. Nine (9) statements or recoverable expenditure and three (3) quarterly procurement reports were reviewed as well as supporting the office of the Auditor General (OAG) in auditing KFDA and Tilenga projects recoverable costs.</p> <ul style="list-style-type: none"> • Reviewed the EPSCC Expression of Interest advertisement • Data centre progress at 85% completion. • Overall legacy data input into electronic databases progressed to 67%. 		
<p>Institutional building</p> <ul style="list-style-type: none"> • Complete the creation of a fully functioning institution with efficient structures, systems, processes, and procedures • Complete 	<ul style="list-style-type: none"> • Improved staffing level to 57.2 percent (164/283 staff). • The following Capacity building initiatives were conducted i) Three (3) staff completed a course on 	<ul style="list-style-type: none"> • Limited wage bill leading to inadequate staff to review technical work performed by the licensees, currently the staffing levels is at 57 percent 	<ul style="list-style-type: none"> • Advocate for the increased wage bill for the Authority. • Advocate for increased Non-wage budget allocation to the Authority. • Expedite the

Agreed Undertaking 2019/2020	Progress of undertakings	Challenges	Measures to Mitigate challenges
<p>recruitment to fill the structure</p> <ul style="list-style-type: none"> • Training of specialized staff 	<p>Metering offered by the Norwegian Society for Oil and Gas Measurement (NFOGM), ii) Training on the use of PIPESIM software iii) Amplitude Versus Offset (AVO) and seismic inversion with Petrel.</p> <ul style="list-style-type: none"> • Three staff are doing geo-science Masters' degree abroad. • A total of forty-three (43) staff attended capacity building programs. • A new power back-up system was installed at Amber house. A new and bigger capacity 45KVA generated was installed at Entebbe to serve blocks A, B, C & D. • The first module of the Personnel, Events and Records Management System (PREMS) was rolled out on 1st June 2020. 	<p>(164/283 staff).</p> <ul style="list-style-type: none"> • Limited funds for capacity building of staff • Limited Office space, the Authority is renting office space in Entebbe which is not enough with the growing staffing levels. 	<p>Completion of Petroleum Building in Entebbe.</p>
<p>Implement the National Content</p>	<ul style="list-style-type: none"> • Reviewed the Upstream and the 	<p>Limited capacity (both capital and</p>	

Agreed Undertaking 2019/2020	Progress of undertakings	Challenges	Measures to Mitigate challenges
Policy	<p>Midstream guidelines on National Content in the oil and gas sector in Uganda in May 2020.</p> <ul style="list-style-type: none"> • Operationalized the Oil and Gas Trainers' Association of Uganda. • Reviewed the IOCs' Manpower plans, Training and Recruitment Plans and Nationalisation Plans for 2020 • 32 work permit applications were reviewed and only twenty (20) application was recommended for approval. • Updated the National Supplier Database (NSD), applications increased to 2,392 and 1,775 companies were qualified. • Updated the National Oil and Gas Talent Register (NOGTR), a total of 2,740 applications were received, 	human) of Ugandan Enterprises to participate in oil and gas sector in Uganda.	

Agreed Undertaking 2019/2020	Progress of undertakings	Challenges	Measures to Mitigate challenges
	1,033 assessed, 89 passed and 72 published as of 30th June 2020.		

5.5.2 Other Petroleum Authority of Uganda achievements in FY 2019/20

- i. Prepared a high-level Risk Register
- ii. Maintained cooperation with three (3) out of 5 planned existing partners - Energy Water and Utilities Regulatory Authority (EWURA) of Tanzania and Royal Norwegian Government and Energy Regulators Association of East Africa (EREA).
- iii. Seven (7) out of Nine (9) directorates were audited between July 2019 and June 2020.
- iv. Prepared final draft of the Strategic Plan for 2020/21-2024/25 and final draft Performance Measurement, Monitoring, Evaluation and Reporting Framework.
- v. Conducted PESTEL analysis of external environment of the Petroleum Industry.
- vi. Due diligence was undertaken to check on status of the cases that were filed in Masindi High Court against the PAU and other Government Agencies.
- vii. Proposed Amendments to the Upstream Regulations were approved by the Minister and submitted to UPPC for gazetting.
- viii. Proposals made for amendment to the Midstream Regulations following the consent agreement for the Midstream SI.
- ix. Held two (2) Petroleum Regulatory Review workshops between where Laws and Regulations where upstream and the midstream laws and upstream general regulations were reviewed.
- x. Reviewed the 2019 health and safety management system audit reports for CNOOC and TEPU and Road safety inspection report for the Albertine Graben.
- xi. Monitored field operations through reviewing daily, weekly monthly statutory reports for KFDA, Tilenga Project Area operations and EACOP Project activities and 5 HSE incident reported.
- xii. Monitored the deployment of Government security personnel in Tilenga Project area, KFDA oil & gas facilities, PAU offices including data centre.
- xiii. Undertook environment compliance monitoring of oil and gas activities in the Albertine Graben. The areas monitored included Tilenga Project Area, Kingfisher Field Development Area (KFDA) and Kaiso-Tonya Area.
- xiv. Monitored the implementation of Resettlement Action Plans for Tilenga, Kingfisher Field Development Area and EACOP project as well as the Livelihood Restoration Programmes and grievance management.
- xv. Organised 3 EACOP public hearings with 5,224 participants

- xvi. Reviewed the Tilenga feeder pipeline ESIA report, G&G audit report for EACOP and Enviroserv Wate treatment plant environmental Audit,
- xvii. Created awareness and implemented precautionary measures for COVID-19 in the PAU working environment and Licenses operational areas.
- xviii. Investigated an oil spill incident from geothermal exploration well in Kibiro, Hoima District.

5.5.3 Challenges to PAU performance and measures undertaken to remedy

Table 39: Challenges to PAU performance and measures undertaken to remedy

Challenges	Measures undertaken to remedy
Inadequate funds	<ul style="list-style-type: none"> • Proper planning • Dialogue and engagement with MFPED • Operationalization of the alternative sources of funding
Inadequate staffing (57% staffing level)	<ul style="list-style-type: none"> • Expedite recruitment • Flexibility in recruitment and deployment policy (short-term employees, graduate trainees)
Legal framework that require urgent review such as those related to national content, the mPSA, penalties for non-compliance by the licensees, monitoring of costs and timing of the production licenses.	Expedite the review of regulatory regime
Inadequate office space for all staff	Renting of office space

5.5.4 PAU Plans and strategies for FY2021/22

Table 40: PAU Plans and strategies for FY2021/22

Key Outputs for FY 2020/21	Performance Indicators	Targets for FY (2021/22)
1. PAU Staff Recruited	No of staff recruited	25
2. Data Centre Completed	Percentage completion of Data centre	100%
3. Offsite data backup and Disaster Recovery system established	Percentage Completion of DBDR system	10%

4. Real Time Operational Centre (RTOC) Established	Percentage Completion of RTOC	19%
5. Modern Core Store equipped	Level of Core store equipped	66%
6. Seismic data tape, storage and transcription system procured	Seismic data tape, storage and transcription system in place	1
7. Requisite Geoscience software procured	No. of requisite Geoscience software procured	3
8. ERP system established	Percentage completion of ERP system	40%
9. NSD upgraded	Percentage completion of NSD upgrade	80%
10. NOGTR upgraded	Percentage completion of NOGTR upgrade	100%
11. E-work permit implemented	Percentage implementation of E-work permits	85%
12. An Integrated economic modelling and reporting framework developed.	Percentage completion of development of an Integrated economic modelling and reporting framework	75%
13. Assorted ICT equipment procured	No and type of ICT equipment procured	Assorted
14. Data management hardware and software applications acquired and integrated	No and type of Data management hardware and software applications acquired and integrated	Assorted
15. EHS Monitoring tools, software and equipment procured	No and type of EHS Monitoring tools, software and equipment procured	25
16. Project vehicles procured	No. of project vehicles procured	4
17. The PAU Staff trained	No. of the PAU Staff trained	50

5.6 Uganda National Oil Company (UNOC)

In the year under review, the Company was capitalized following reversal of its Vote status. Detailed below is the Company's performance in the the FY2019/20.

5.6.1 Implementation Status of UNOC Undertakings for FY 2019/20

Table 41: Implementation Status of UNOC Undertakings for FY 2019/20

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
1.0: Development of human resource capacity for the Company.			
Recruitment plan updated and implemented	27 staff recruited vs 30 planned	Budget constraints to achieve 100%	<ul style="list-style-type: none"> Adopted a phased recruitment approach. Commenced Company

			structural reviews to inform recruitment plan
Undertake internal promotions of staff	Extended two (2) acting positions at Senior level		
Put in place Career Development Plans (CDP) for recruited staff	Career development plan for staff established.	Implementation constrained by funds availability	<ul style="list-style-type: none"> • Prioritization of training opportunities • Utilization of in-house knowledge capabilities where possible.
Implement Staff Retention and Training Plans	<ul style="list-style-type: none"> • Achieved 40% of the training plan for the year. • Extended benefits to staff e.g. medical insurance and counselling services etc. • Conducted leadership programmes to nurture future leaders. • Extended 3 internship placements • Staff induction programs execute 	<ul style="list-style-type: none"> • Budget constraints • COVID-19 pandemic which restricted staff mobility i.e. project seconded staff to different project studies. 	<ul style="list-style-type: none"> • Commenced arrangements to optimize virtual training opportunities. • Utilization of in-house knowledge capabilities where possible
2.0: Management of state participating interest in the Country's Upstream Asset			
Progress the roles of non-operator for existing development areas i.e. Kingfisher and Exploration Areas 1& 2	<ul style="list-style-type: none"> • Contributed to discussions of signing of the New Sale and Purchase Agreement (SPA) 	Setback caused by termination of previous SPA	Continuous assessments on the implication of termination on the projects
Support execution of 2019 work program in the upstream activities	Engaged in pre-FID activities for Tilenga and Kingfisher projects as an observer	Delayed Back-in into the JOA	Continued to attend the engagements for information as an observer
Finalize the negotiation of agreements relevant to upstream and protect government value.	Negotiated UNOC's Back-in into the Joint Operating Agreements (JOAs)	Prolonged conclusion of the negotiations	
Finalize FID for upstream projects	Negotiated agreements to resolve outstanding issues to achieve FID	Protracted negotiations to resolve outstanding issues in the key agreements	An FID Management Committee was constituted to coordinate activities required for the achievement of FID.
3.0: Management of Government participating interest in the Refinery Project			
Undertake Pre-FID activities (including Commercial & Market Study, Final refinery configuration, ESIA, FEED)	<ul style="list-style-type: none"> • ESIA for the refinery ongoing • FEED at 65 – 70% completion. • Pre-feasibility studies to inform petrochemical and fertilizer industries 	Delayed developments in the Upstream which continued to pose a crude oil supply risk.	Resumption of activities to progress Upstream developments.

	<p>development conducted</p> <ul style="list-style-type: none"> • LPG⁴ business case development commenced • Borehole pump testing operations conducted. 		
Secure funding for the 40% government equity participation in the refinery	<ul style="list-style-type: none"> • Zero funding secured • Continued to engage MoFPED to secure funding 	Lack of confirmation on the 40% Equity contribution by GOU.	Continued engagements with MoFPED and Cabinet on securing funding for the 40% Government Equity
Draft agreements relevant for implementation of refinery supported to protect government value	<ul style="list-style-type: none"> • Project Framework Agreement timelines revised from Effective Date + 24 months to Effective Date + 41 months. • Extension approved by Cabinet 		
Participate in the Engineering, Procurement and Construction contract award and ensure that government value is maximized.		Pending conclusion of earlier activities such as FEED, ESIA and project agreements.	
Finalize FID for the Refinery Project		Subject to conclusion of earlier activities such as FEED, ESIA and project agreements.	
4.0: Management of Government participating interest in the EACOP Project			
Achieve alignment on EACOP Business model	Business model agreed among partners		
Secure funding for the 15% government equity participation in the pipeline	<ul style="list-style-type: none"> • Zero funds secured • Engagements with MOFPED continued 	Lack of firm commitment to finance the 15%	Financing options generated and discussed with MoFPED
Draft agreements relevant to pipelines supported to protect government value	Negotiated commercial terms in the Host Government Agreements (HGA), Transportation and Tariff Agreement (TTA) and the Shareholders Agreement	<ul style="list-style-type: none"> • Delayed resolution of outstanding issues • Slowed progress of negotiations as result of COVID-19 pandemic 	Conducted continuous assessment of the impact of outstanding issues to the projects to inform decision making
Participate in the Engineering, Procurement and Construction contract award and ensure that government value is		Halting of all early civil works and procurements following the termination of the farm out transaction.	Continued efforts to resume procurement processes for All Civil Work activities.

⁴ LPG is one of the products expected from the refinery and early planning for its utilization and handling in Uganda is critical to UNOC

maximized.			
Finalize FID for the EACOP Project		Subject to conclusion of earlier activities such as FEED, ESIA and project agreements.	
5.0: Management of the storage terminals			
a) Jinja Storage Terminal (JST)			
Continue re-stocking of the Jinja Storage tanks (JST)	Zero National Strategic Reserves stocked	Lack of funds to stock National Strategic Reserves	Continued to engage MOFPED to provide funds for National Strategic Reserves
	Achieved 10% average monthly throughput through UNOC's Joint venture partner, One Petroleum	High operational costs and lack of alternative routing deliver products	<ul style="list-style-type: none"> Conducted performance reviews and made recommendations to improve throughput sales Engaged Government and other financiers to fund the investment in JST upgrades including construction of oil jetty and pipeline to enable water transport
	Application for title deed for JST submitted	Delays in finalization of the leasing process	Continued engagements with Uganda Land Commission to obtain Title deeds.
Commence bulk trading operations	Obtained accreditation for bulk trading business in February 2020 from PPDA		
	<ul style="list-style-type: none"> Commenced bulk trading in March 2020 2.067 M3 delivered to Stabex International Limited Generated a net contribution of UGX 238.77 Million. 	The business was paralyzed by the COVID-19 pandemic causing long vehicle queues and delivery delays.	<ul style="list-style-type: none"> Engaged Government and other financiers to fund the investment in construction of oil jetty and pipeline to enable water transport Engaged Uganda Railway Corporation on the use of Rail wagons
	Reviewed several financing proposals to seek funding for bulk trading operations.	Insufficient funds to boost/expand the business.	Continued efforts to establish more potential partners in bulk trading.
	Completed the review of the Business Processes and		

	Standard Operating Procedures Manual.		
Continue processing of developing Kampala (Buloba) storage terminal (KST)	<ul style="list-style-type: none"> • Acquisition of Transaction Advisory Services at contract approval stage • Concluded KST ESIA and a report submitted to NEMA for approval and issuance of a Certificate. • Completed the review of the power reticulation proposal and submitted the power supply application to UMEME for consideration. 		
	Completed fencing of KST land		
	<ul style="list-style-type: none"> • Zero funds secured • Prepared and submitted KST project concept paper to Development Committee-MOFPED 	Lack of financing for GOU Equity share in KST	Presented financing options to MOFPED and this is work in progress
6.0: Management of the development of the Kabaale Industrial Park in Hoima			
Implement the unbundling the Master Plan for the KIP	<ul style="list-style-type: none"> • Activity schedule developed • Delineation of potential occupants in the park • Interim separation and identification of different potential occupants completed • Boundary survey of the Park completed 		
Identify Strategic Partner(s) for the development and management of KIP	Completed Terms of Reference for Transaction Advisor to guide the strategic partner selection process		
Secure funding for common infrastructure	<ul style="list-style-type: none"> • Zero funding secured • Prepared and submitted KIP project concept paper to Development Committee-MOFPED 	Lack of funding	Engaged MOFPED on possible financing options
Support execution of the KIP enabling infrastructure	<ul style="list-style-type: none"> • Guided on the suitable location of some Air-port facilities • Developed Terms of Reference for UNOC's site office 		
Develop Land Allocation Policy for KIP	Draft Land Allocation Policy developed		
Develop a plan for attracting investors to KIP		Pending the completion of the Land Allocation Policy and designing of the KIP	Fasttrack the completion of the common infrastructure, designing and demarcating plots to make the park attractive

7.0: Acquire acreage within the Albertine Graben to pursue joint venture investments in Upstream Petroleum operations			
Submit the application for exploration license	<ul style="list-style-type: none"> •Negotiated with CNOOC the joint application over Pelican-Crane block. •Published the Expression of Interest to secure strategic partner to participate in 2nd Licensing round 	Prolonged resolution of outstanding issues	Fast track the conclusion of outstanding issues
Analyze and interpret data for identified fields to inform decision making	Undertook a preliminary analysis of data for the five blocks in the second Licensing round.		
Develop a strategy for funding of UNOC's equity participation in exploration licenses	Financing strategy in place		
Procurement of the required facilities and machinery such as ICT infrastructure, specialized software, and other technical equipment to facilitate the operations of the company.	Partially acquired the IT hardware and software, cabling, and networking	Insufficient funds to acquire all planned procurements.	Prioritized the available funds and deferring unfunded items to FY 2020/21 budget.
Development of a comprehensive strategic plan for UNOC and its subsidiaries Uganda Refinery Holding Company and National Pipeline Company.	<ul style="list-style-type: none"> • UNOC Corporate Strategy in place • Developed an integrated planning and budgeting tool aligned to the Balanced Scorecard 		

5.6.2 Other UNOC achievements in FY 2019/20

UNOC Enterprise Risk Management Policy developed.

5.6.3 UNOC Plans and Strategies for FY2021/22

- i. Investment in the EACOP through securing 15% equity participation.
- ii. Re-stocking of Jinja Storage Terminal
- iii. Expansion of the Jinja Storage tanks (JST) through construction of Oil Jetty and Pipeline to enhance security of supply
- iv. UNOC Capitalization /operational funding gap



Picture 19: UNOC's Management team, the Chairman of the Board and the Minister of MEMD. Hon. Mary Goretti Kitutu (in the center) during the launch of UNOC's bulk trading petroleum products business at Stabex International Head office.

6. MINERALS SUB-SECTOR

6.1.1 Introduction

This section summarizes the mineral sub-sector annual performance and major advances, key accomplishments, challenges and barriers and proposed mitigation measures. During the Year under review, the subsector finalised preparation of the Mining and Mineral Bill 2020, registered mineral production worth UGX175.76Bn and supervised operations across the 734 active licenses and certificates.

The subsector also commenced preparation for a request for proposal document for a new operator to revamp Kilembe Mines. Detailed below is the subsector's performance in the FY2019/20.

Table 42: Sector Performance against NSI

NSI	FY 2017/18	FY2018/19	FY 2019/20
Percentage coverage of Geological mapping at scale 1:50,000	18%	25%	26%
Percentage coverage of Geological mapping at scale 1:100,000	52%	78%	78%
Percentage coverage of Geochemical mapping	37%	38	38%
Percentage coverage of Airborne Geophysical mapping	80%	80%	80%
Increased employment opportunities in the mineral sector	30.1%	36%	37%
Change in Revenue from Mineral rights (NTR)	16.98 Bn	16.3 Bn	12.53
Value of Mineral production (UGX Bn)	158.754 Bn	154.5 Bn	141.8bn
Value of Mineral Exports as per permits issued (UGX Bn)	14.231 Bn	1,880 Bn	671,545,781 m
Value of Gold Exports licensed under manufacture under bond (UGX)	1,397Bn	1,728 Bn	4,657Bn

6.1.2 Implementation Status of Minerals subsector Undertakings for FY 2019/20

Table 43: Implementation Status of Minerals subsector Undertakings for FY 2019/20

Agreed Undertakings	Progress on Undertakings	Challenges	Measures to mitigate challenges
<p>Develop a Legal and Regulatory framework for mining and geothermal</p>	<ul style="list-style-type: none"> • The draft Mining and Minerals Bill was finalized and stakeholder consultations undertaken. A revised draft of the bill that incorporated stakeholder concerns has also been finalized. A regulatory impact assessment and a certificate of clearance of financial implications are being concluded before the bill is presented to cabinet for consideration and approval. • The draft ICGLR Regulations have been developed and the Ministry is coordinating with the Ministry of Foreign Affairs, which sponsored the bill, and the Office of the Solicitor General for final drafting. • The draft Geothermal Policy, Cabinet Memorandum and Regulatory Impact Assessment documents were prepared for validation in an Inter-Ministerial Workshop before they are presented to the Ministry Top leadership for 	<p>Covid-19 restrictions impacted the progress of policy, legal and regulatory reforms.</p>	<p>Adoption of virtual tele-conferencing platforms to hasten the conclusion of the reforms.</p>

	transmission to Cabinet.		
Evaluation of iron ore, REE, uranium, wolfram, gold prospects.	Undertook gold and base metal exploration in Amuru, Kabale and Kasanda	<ul style="list-style-type: none"> • Limited funding to carry out detailed evaluation; • Limited capacity of analytical laboratory at the time due to lack of equipment and power instability; 	<ul style="list-style-type: none"> • GoU to avail adequate funds to carry out detailed exploration and evaluation of the mineral resources; • Laboratory has been equipped and more specialized analytical equipment are being procured to support mineral exploration and development.
Build capacity of staff and key stakeholders of the mineral sector.	<ul style="list-style-type: none"> • 3 Officers completed MSc. in Mining Engineering and Analytical Chemistry from UK. • Four (4) officers continue with international MSc studies namely: (i) Mr. Sudan Unity Birungi MSc. in Geological Engineering in Malaysia; (ii) Mr. Keith Tunde for Msc. in Environment Management in UK; (iii) Ms. Jacinta Achieng in Earth Resources Engineering: Geothermal Chemistry and Mr. Eriya Kahwa in Earth Resources Engineering: Geothermal Exploration Geophysics in Japan. 	<ul style="list-style-type: none"> • Limited Funds. • New geoscientists have been recruited and increased mining activities calling for continued training of staff and stakeholders 	<p>Providing for more funds on training in the Projects packaged. Training plans to be maintained for continuity and effective management of the mineral resources</p>

	<ul style="list-style-type: none"> • Five (5) geoscientists continued with trainings leading to Master of Science in GIS and Remote Sensing at Makerere and Nkumba Universities. • ASMs, LG Officials, and communities in mining areas trained on mining legislation, best mining practices, health safety and environment protection and business skills 		
Put in place two addition analytical techniques and one mineral value addition technique.	<ul style="list-style-type: none"> • Carbon and sulphur analysis, XRF analysis for precious metals and water analysis using iron chromatography analytical techniques in place; • Mineral beneficiation: Laser particle size analysis, induced roll magnetic separation, hydro cyclone test design, gravity separation on shaking table & mineral jig procurements in final stages 	<ul style="list-style-type: none"> • lock down due to Covid-19 pandemic affected installations and trainings. • Delays in procurement and delivery of equipment and Limited funding, delays in consultations and feed backs affected progress 	<ul style="list-style-type: none"> • Electrical problems are now being fixed; Complete rewiring at DGSM laboratories and allow technical experts to fly in to install the equipment and train users • GoU to avail funds.
Create an integrate geo-data information systems	An integrated Geological and Mineral Information System (GMIS) to facilitate information dissemination was launched and is operation. This system is used for capturing, processing and dissemination of geo-information. Through the GMIS all the information systems, maps, reports,	Use of the platform by staff has not yet gained momentum it deserves due to lack of awareness of importance of the platform	Workshop planned to sensitize DGSM staff on the use of the platform to serve our clients and also promote the mineral sector better planned.

	publications, mining cadastre portal in DGSM can be accessed.		
Upgrade Mining Cadastre and Registry System to e-Government system for online transactions and electronic transactions.	Online e-government mining cadastre system launched on 1/10/2019 to facilitate licensing process; The Mining Cadastre and Registry System (MCRS) was up-graded to include online application, payment and submission of statutory documents/returns.	Incomplete information submitted by portal users	Training material to be developed and uploaded on the user portal. Onsite trainings are planned once the Covid-19 travel restrictions are lifted.
Conduct inspection and monitoring all mineral rights.	<ul style="list-style-type: none"> • A total of 733 licenses were operational as of 31/03/2020. Out of the 733 licenses 516 were for spatial mineral rights (exploration, location, mining, and retention), 170 prospecting licenses and 47 mineral dealers; • Reviewed and inspected a total of 252 mineral rights providing an annual coverage of 48% of spatial mineral rights and over 100% quarterly coverage; • An average of 20% of mineral rights reviewed were compliant with provision of the mining Act, 2003; • 70% of Mineral rights reviewed, inspections undertaken at Kisita and AUC Mine in Kasanda and Busia; Enforcement notices issued; 	<ul style="list-style-type: none"> • Limited funding to carry out inspection and monitoring of all mineral rights. • Illegal mining, - conflicts with landowners and land grabbing in as documented in central Uganda; • illegal mining, - lack of weighbridges, inadequate security to stop foreigners from engaging in mining, PMPU deployed to curb illegal mining in Kaaboong in Feb.2020; • illegal mining, - land grabbing, and lack of weighbridges in eastern region; 	<ul style="list-style-type: none"> • GoU to avail funds. • Licensee notified of their obligations and enforcement is being taken in these areas; • PMPU deployed to curb illegal mining in Kaabong in Feb.2020:

		<ul style="list-style-type: none"> • General slowdown in exploration and mining activities within Kigezi and Ankole regions attributed to restriction on the export of raw mineral and concentrates and the need for in-country value addition that affected operations of Tin, Wolfram and Iron Ore; dangers of • environmental degradation occasioned by the, use of cyanide and mercury in gold mining in Mubende, Kassanda, Buhweju, Karamoja, Busia and Namayingo 	
<p>Establish and operate a mineral certification system in Entebbe to increase mineral trade and global competitiveness.</p>	<ul style="list-style-type: none"> • DGSM continued technical collaboration with Partnership Africa Canada (now IMPACT) in the implementation of the Regional Initiative on Fight against the Illegal Exploitation of Natural Resources (RINR) with financial support of BGR, the German Geological Survey. 	<p>Due to the closure of Entebbe Airport and borders to Uganda the BGR support was affected.</p>	<p>BGR delegates have been operating remotely from Germany mainly on zoom.</p>

	<ul style="list-style-type: none"> • A mine site inspection manual and a mine site inspection template were developed and finalized for Uganda. • Training of government inspectors (Mines, Customs, Police, Labour, and Environment) to use the Mine Site Inspection Template completed. • Two mock mine site inspections were undertaken at Kikagati Tin Mine in Isingiro District and Nyamuliro Wolfram Mine in Rubanda District to test the mine site inspection manual and mine site inspection template. • A draft mineral export procedure for Uganda was developed and validated in a stakeholder meeting. • The guidelines for evaluation process for chain of custody services providers that express interest was developed and validated in a stakeholder meeting. • The National (Uganda) Road Map to the implementation of the 6th Protocol of the ICGLR Regional Initiative on the fight Against the Illegal Exploitation of Natural Resources was prepared. 		
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	<ul style="list-style-type: none"> • Establishment of the “Uganda-ICGLR Certification Unit”, based at DGSM in Entebbe is underway to document production and trade of 3Ts + Au (Tin, Tungsten, Tantalum and Gold) minerals in Uganda and the Great Lakes Region. • BGR has expressed interest to provide technical assistance and capacity building to Uganda in regard to the ICGLR-RCM implementation in Uganda. DGSM and BGR signed a MOU on the proposed support. • BGR has started procurement of the first batch of inspection equipment. • Procurement and implementation of a baseline study on RCM implementation was finished in March 2020. The report of the RCM baseline study in Uganda about Assessment of Uganda’s position towards the implementation of the ICGLR-RCM and the ICGLR Certificate was developed. 		
Construct at least one (1) mineral beneficiation pilot	Construction of mineral beneficiation centres in Ntungamo by M/S Techno 3	Works at Ntungamo delayed because of conflict with a	Extension of contract required to complete and

center.	Contractors stands at 50% and in Fort Portal by M/S BMK contractor stands at 30%;	neighbor and in Fort Portal by complication of ground conditions at the start	equip the building for use,
Conduct Airborne Geophysical Survey of Karamoja.	Re-packaged the project to attract external financing for Airborne Geophysical Surveys and Geological Mapping of Karamoja. The government of Spain expressed willingness to finance the aerial surveys and financing agreements were concluded on 8th April 2020. Final clearance for aircrafts has been granted.	Covid 19 pandemic has introduced new requirements for aircraft flying which were not originally in the plan.	<ul style="list-style-type: none"> • Update plan with the SOPs as guided by Ministry of Health. • Allow contractor to operate during the pandemic. • GoU to provide security to the contactor.
Promote and market the country's mineral investment potential and celebrate centenary year of mineral industry in Uganda.	<ul style="list-style-type: none"> • The mineral sub-sector was promoted at six (6) local conferences/workshops : Joint Sector Review 2019, Mineral Wealth Conference 2019, Energy and Mineral Week 2019, the 12th annual Tax payers 'Appreciation Week in September 2019 and the Rwenzori Local Economic Development Expo2020. • Mineral sub-sector promoted at one (1) Regional Conference: Uganda – Tanzania Joint Business Forum at the Mwalimu Julius Nyerere Conference Center, in 	<p>Celebrations of a Centenary (100 years) of DGSM was scheduled for April 2020 but was postponed due to Covid-19 Pandemic.</p> <p>Skills in packaging promotional materials needed to effectively improve mineral investment promotions.</p> <p>The Covid-19 pandemic forced the postponement of WGC2020 to May 21 – 26, 2021.</p>	<p>A scientific celebration of DGSM Centenary later this year 2020 is being organized.</p> <p>Train staff in investment promotion techniques</p> <p>Only partial funding from Congress Organizers was extended to the technical paper writers to encourage participation.</p>

	<p>Dar es salaam, Tanzania on 5th September, 2019; Mining Indaba 2020, Cape Town, South Africa.</p> <ul style="list-style-type: none"> • Mineral sub-sector promoted at International Level: • Prospectors and Developers Association of Canada held annually every March (PDAC 2019 and PDAC 2020), in Toronto Canada. • Eight (8) Staff have prepared technical papers that were accepted for presentation at WGC2020 in Reykjavik Iceland from April 27th to 1st May 2020 as part of technology transfer and information dissemination. • Compiled geological maps and mineral information for the country; • Compiled 31 geological maps for ASM mining sites in Kassanda District; • Mineral potential of Uganda and for various regions of Uganda prepared with brochure (Rwenzori Region, Eastern, Central, Kigezi). 		<p>Additional funding is sought from GoU to cover the balance to enable WGC2020 (1) participation to augment geothermal development.</p>
<p>Promote gender and equity in the</p>	<ul style="list-style-type: none"> • Inspection geared towards gender and 	<ul style="list-style-type: none"> • Large in formal sector; 	<p>Step up sensitization;</p>

<p>mining community through awareness programs. Create awareness and carry out screening of HIV/Aids and hepatitis B for artisanal miners. Compliance monitoring of health, safety and environment issues</p>	<p>health and safety conducted in quarry mining sites in Kampala, Tantalite at Wampewo in Mityana District, Namakonkome Kaolin in Wakiso district and six (6) stone quarry operations around Kampala.</p> <ul style="list-style-type: none"> • Over the 7 mines/quarries inspected with 6,224 miners consisting of 74% men, 23% women, 2 % children and 0.005% disabled were sensitized on the mining law, child labour and health and safety issues in mining; • Two associations in Buhweju granted a prospecting License; • Sensitization at Kilembe, Busia and Kassanda on issues of flooding, illegal mining, best practices in mining were addressed as well as gender equity, health and safety, environment, child labour and human rights. 	<ul style="list-style-type: none"> • Old traditions • Environment degradation by informal sub-sector 	<p>Encourage Behavioral change; Enforcement of compliance to mining laws.</p>
<p>Map, register, and formalize of artisanal and small scale (ASM) miner's country wide (70% completed) and determine their</p>	<ul style="list-style-type: none"> • The Ministry contracted the African Centre for Energy and Mineral Policy (ACEMP) to assist in the biometric registration of all ASMs in the country. The prototype software for 	<p>Funds needed for electronic registration equipment. The Consultants activities were heavily impacted by the Corona Virus</p>	<p>GoU to provide funds. A one-year extension of the consultancy has been sought to conclude the process.</p>

<p>revenue potential. Map and gazette areas for ASM operations.</p>	<p>the biometric registration has been developed and awaits integration with NIRA's database.</p> <ul style="list-style-type: none"> In addition to the 30% area allocated to ASMs carved out of M/S AUC licenses, another 1 square kilometre has been allocated to MUMA in their previous working area in Kamusenene. An area is being identified in Buhweju for local ASMs in the district. Over 726 ASMs across the country were sensitized and trained as trainers of trainers (ToTs) on the Biometric Registration of Artisanal and small-scale Miners (BRASM). These included 78 miners from Amudat, 80 from Busia, 103 from Bushenyi, 105 from Gulu, 75 from Kaabong, 85 from Ntungamo, and 110 from Wakiso District. Registration expected to commence in March, 2020. 33 geological maps produced over ASM active areas in Kassanda and Mubende Districts. 	<p>pandemic and the delay in procuring registration equipment.</p>	
<p>Put in place and implement a</p>	<p>Draft communication strategy was developed and</p>	<p>Stakeholder engagement is</p>	<p>Trying meetings through the use</p>

comprehensive communication strategy for the mineral sector.	submitted for review, approved and pilot tested/implementation by DGSM. Information packs for communication are being prepared.	affected by the COVID 19 Pandemic. Unavailability of Funds for implementation.	of zoom and plan to carry out site visits to key stakeholders. GoU to provide funds for implementation
Strengthen and expand Seismological Network and monitor other geo-hazards.	Expansion of the network not done.	Lack of funding	To be carried forward to next FY
Design and support construction and installation of the Infrasound Network Infrastructure in Uganda.	Design and Construction of Entebbe Infrasound was completed Procurement of the specialized equipment for Entebbe station was initiated.	Lack of adequate allocation of funds	Appealed for extension for 2 years
Direct use studies for Buranga and Ihimbo to assess the potential for social economic development.	A project to identify opportunities for direct use geothermal applications from technical, financial and market viability perspectives in six East African countries, including Uganda was commissioned on 12th December 2019. The one-year project is sponsored by the Climate Technology Centre Network (CTCN) of the United Nations Framework Convention on Climate Change (UNFCCC). CTCN has since procured M/S GreenMax Capital Advisors to provide technical	The activity was supposed to be held in Uganda through workshops and field activities. But this has not been possible due to the Covid-19 pandemic.	It was decided in the short-term, to use Zoom/webinar platform for the meetings and conferences, and distribution of questionnaires to assist in data and information gathering. The first meeting was held on 18 th May 2020 and the second on 23 rd July 2020.

	<p>assistance. The consultant has already started collecting data and information from stakeholders in Uganda who include: MEMD, Ministry of Water and Environment (MWE), Uganda Wildlife Authority (UWA), Academia, Private Sector and Community Representatives in areas surrounding Kibiro, Panyimur, Buranga and Katwe geothermal site.</p>		
<p>Detailed surface studies of two other geothermal sites.</p>	<p>This activity was planned for April to June 2020 but was not carried out.</p>	<p>Lack of funding.</p>	<p>The activity is planned for the FY 2020-21 for Ihimbo and Kanangorok geothermal areas located in Rukungiri and Karenga districts respectively.</p>
<p>Drill minimum of five (10) Thermal Gradient Wells at Buranga and Katwe.</p>	<p>This activity which was supposed to follow the drilling at Kibiro and Panyimur geothermal prospects was not carried out. Instead Eight (8) Temperature Gradient Holes were drilled at Kibiro.</p>	<p>The drilling at Kibiro was carried forward from the FY 2018/19 to FY 2019/20 due to delays in the procurement of a consultant and a contractor.</p>	<p>The procurement to start as early as possible to avoid delays.</p>
<p>Plan, design and prepare tender documents for drilling three (3) deep exploration and injection wells (3) at each of the prospects at</p>	<p>This activity was to follow the drilling of Temperature Gradient Holes at Kibiro and Panyimur and is yet to be carried.</p>	<p>The delayed procurement of a consultant and a contractor to drill at Kibiro and Panyimur. The drilling at Panyimur was suspended</p>	<p>The activity is planned to take place in the FY 2020-21 after completion of the drilling at Kibiro and Panyimur.</p>

Panyimur and Kibiro.		pending carrying out Environmental and Social Impact Assessment (ESIA) at Kibiro and Panyimur following a drilling incident at Kibiro that caused environmental concerns.	
The Ministry to conduct four public geothermal outreach workshops	Two outreach workshops were carried out in Hoima District; one for the Bunyoro Kitara Kingdom in January 2020 and another on at Kibiro in February 2020 before the drilling of temperature gradient holes.	Planned workshops for Pakwach District could not be carried out during Covid-19 lockdown.	The activity has been suspended until further notice until the funds become available.
Promote exploration and mining areas for investment at Kilembe	<ul style="list-style-type: none"> The Ministry of Finance, Planning and Economic Development (MoFPED), the Ministry of Justice and Constitutional Affairs (MoJCA), the Ministry of Energy and Mineral Development (MEMD) and Kilembe Mines Ltd (KML) were tasked by Cabinet to fastrack the process of identifying a new operator to revamp Kilembe Mines after the termination of Government's Concession Agreement with Tibet Hima Mining Company Ltd (THMCOL). A committee was constituted to handle the task. 	Delays in decision making. A Cabinet Memorandum on revamping Kilembe Mines was prepared to be presented to cabinet before end of March2020, which did not happen due to COVID-19 pandemic restrictions.	There is need to re-evaluate the current asset value of the entire infrastructure of Kilembe. Clear strategy to develop KML to be set up;

	<ul style="list-style-type: none"> • The committee developed a term sheet for the proposed Mineral Production Sharing Agreement (MPSA), costed implementation program, and proposed evaluation criteria under a Public-Private Partnership’; • ToR’s for the selection of a new operator for Kilembe Mines were prepared. • A meeting was held on 12th March 2020 at the Privatization Unit to conclude the RFP for the Development of Kilembe Mines. • An inter-ministerial committee chaired by the 2nd Deputy Prime Minister was tasked with resolving the encroachment issues, environment concerns and court cases and a draft budget has been prepared. 		
Ensure environmentally rehabilitated areas and protect Kilembe mines exploration areas and Mining Lease.	Previous efforts hampered by new occurrences of floods in May 2020.	Kilembe Mines has been dilapidated by floods.	Liaison with other relevant MDAs on strategic intervention to protect the mine infrastructure from impacts of future flooding events.
Maintain	Most assets near the	Limited funding to	GoU to provide

functional and unencumbered income generating KML assets	Nyamwamba river bank damaged by the May floods.	mitigate impacts of R. Nyamwamba floods.	funds.
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Picture 20: Drill Cores for Mineral Sampling



Picture 21: Drilling at Makuutu clay project Rwenzori JV



Picture 22: Grace Lajwe, Principal Chemist using the Auto-titrator for elemental analysis of minerals.



Picture 23: DGSM team observing a sheared vein containing Tin at Kasangati Tin Mine.



Picture 24: Henry Onyeye, Senior Chemist using the Ultra Violet- Visible Spectrometer for qualitative and quantitative analysis of minerals, rocks and ore.



Picture 25: processing of ore from the open cast mine by kisita mining company limited.

6.1.3 Other Minerals Subsector achievements in FY 2019/20

Private sector mineral value addition projects

i. Goodwill Ceramics Ltd

- Manufactures tiles from clay, kaolin and feldspar at a factory located in Kapeeka, about 30Km north of Kampala using locally sourced materials.
- Has had a tremendous impact on Uganda's construction industry since it has reduced tile prices by over half, making tiles affordable for many Ugandans.

ii. Cement Factories

- Four Cement factories are now operating in the country, generating competition that has stabilised cement prices that were previously monopolised by Hima and Tororo Cement. These include; Hima Cement in Kasese, Tororo Cement in Tororo, Simba Cement in Tororo and Kampala Cement in Mukono.

iii. Namekara Vermiculite Mine

- M/s Namekara Mining Co. Ltd (NMCL) is mining vermiculite in Busumbu, Manafwa district.
- The Polymetallic deposit under Namekara Ltd has Vermiculite, Apatite (Phosphate), Iron Ore (Magnetite), Rare Earth Elements among others.
- Namekara is presently processing only vermiculite and stockpiling other mineral commodities, which are even of higher value than vermiculite. The phlogopite predominates below the current mining level that takes only vermiculite.
- The mine produces 30,000 tpa of high-grade vermiculite
- Ban on export of mineral products has affected operations of the company.

iv. Simba Mines

- Setting up a medium scale underground gold mine in Ibanda and Kitagwenda districts with horse-shoe shaped tunnels.
- Production is anticipated to commence in 2021.

v. Gold Refineries

- Five Gold Refineries have sprung up to refine raw gold into pure gold (99.95% and 99.99%). These include; African Gold Refinery, Simba Gold Refinery, Bullion Gold Refinery, Metal Testing and Smelting Company Limited, and Aurnish Gold Refinery.

Gold Exports have since increased as shown in the table below;

Table 44: Trade Statistics of Gold into and from Uganda by value

Year	Imports (UGX)	Exports (UGX)	Re-exports (UGX)
2010	1,223,125	204,963,696	62,351,966,273
2011		745,379,518	15,751,185,208
2012		497,216,000	22,187,885,306
2013		2,044,973,209	6,238,703,028
2014		463,659,818	
2015	420,493	125,425,873,900	
2016	304,097	845,089,240,008	
2017	294,776	1,397,305,211,760	653,038,200
2018	1,262,772,739,579	1,728,609,719,808	
2019	3,745,902,404,317	4,657,889,674,568	
2020	725,531,713,981	690,911,238,303	
TOTAL	5,734,209,100,368	9,449,187,150,588	107,182,778,015

ACP-EU Development Minerals Program

The ACP-EU Development Minerals Programme is a three-year, capacity building program that aims to build the profile, and improve the management, of Neglected Development Minerals (industrial minerals; construction materials; dimension stones; and semi-precious stones). The program is an initiative of the African, Caribbean and Pacific (ACP) Group of States, financed by the European Union and the United Nations Development Programme (UNDP), and implemented by UNDP.

The program has had the following outputs;

- Awareness Campaigns
- Baseline Assessment of DM in Uganda
- Value Chain Analysis of DM in Uganda
- Trainings (HSE, Enterprise Skills, GIS, Reserve Estimation etc).
- Supported Legal and Regulatory Reforms in the sector.
- Small Grants Programme (Upto 20 beneficiaries each USD 5,000).
- A Guarantee Fund - AGF (USD 12M for 6 countries).

Uganda ranked among best performers and so the program (which ended in October 2018) has been renewed for another three years commencing August 2019.

Feasibility study on Iron Ore:

The European Union granted one million euros to the Government of Uganda to carry out feasibility study and establish the iron ore reserves in South Western Uganda. This activity will be implemented jointly by the National Planning Authority and the Ministry of Energy and Mineral Development that will carry out geological mapping, analysis, drilling and evaluation of the iron ore reserves.

6.1.4 Challenges to Minerals Subsector performance and measures undertaken to remedy

CHALLENGES TO PERFORMANCE	PROPOSED STRATEGIES/MEASURES TO ADDRESS THE CHALLENGES
Inadequate Funding for mineral exploration, monitoring and inspection of mining operations as well as maintenance of information systems, equipment and other infrastructure at the Directorate.	Continue sourcing for financing.
High Employee Turnover due to low pay to professionals at DGSM which has led to many staff leave for other better paying jobs elsewhere.	There is need to pay attractively professionals in the Mineral Sub-sector and increase their motivation.
Understaffing at the DGSM with many vacant positions which are even inadequate even if they were to be filled.	There urgent need to fill all the positions in the three departments of DGSM.
Poor infrastructure like electricity water and roads in mining areas hinders mine development.	There is a need to align electricity water and roads to connect mining areas with business centres.
Land tenure system which hampers the development of the mining industry. Laws governing land and access to land	There is need to adjust various laws negatively impacting on development of minerals-subsector

6.1.5 Minerals subsector Plans and strategies for FY2021/22

- i. Undertake Airborne Geophysical and Mineral Resource survey of Karamoja region (to complete the remaining 20% geophysical data coverage of Uganda).
- ii. Undertake detailed geoscientific studies to quantify mineral reserves and generate bankable projects for investment and development;
- iii. Strengthen and implement the legal, regulatory framework and fiscal regime of the mining industry to generate increased mineral revenues from mining activities;
- iv. Undertake geothermal energy studies to enable the country generate electricity and applications in direct use;
- v. Strengthen the geo-hazards monitoring networks in prone areas and update hazard maps for sustainable planning and development of infrastructure in the country.
- vi. Strengthen Mineral analysis, testing and value addition infrastructure in the country
- vii. Strengthen the management of e-government mineral licensing system and integrated information management.

6.2 Kilembe Mines Limited

6.2.1 Implementation Status of Kilembe Mines Undertakings for FY 2019/20

Table 45: Implementation Status of Kilembe Mines Undertakings for FY 2019/20

Agreed Undertaking	Progress on undertaking	Challenges	Measures to mitigate challenges
Promote exploration and mining areas for investment in Kilembe	Continuous; Mode of divesture agreed upon; & attendant draft documents (Request for proposals & Mineral Production Sharing Agreement) prepared to further the process	<ul style="list-style-type: none"> Part of the data handed over to Tibet Hima Mining Company Limited (THMCL) during the Concession era (June 2014 to February 2018) is yet to be retrieved. Funding to first-track & progress activities is not readily available 	<ul style="list-style-type: none"> Pursuit of court case for data & other recoveries against THMCL is on-going. Government engaged to provide funding for the search for investor
Ensure environmentally rehabilitated areas and protect Kilembe Mines exploration areas and Mining Leases.	Protection of exploration areas done by securing Exploration licenses EL1928 and EL1978; applying for transfer from THMCOL to KML; and applying for renewal of Hima lease	<ul style="list-style-type: none"> Encroachment that limits land access for mineral exploration and exploitation; High legal expense to lodge court cases, which take long to dispose of; and Antic technology & dilapidated assets without ready spares on market, rendering care & maintenance work very costly. Transferred permits & licenses still in THMCL names, though operated by KML. 	<ul style="list-style-type: none"> Solicit court and administrative interventions. Solicit for an investor to bring in new technology.
Maintain functional and unencumbered	On-going	<ul style="list-style-type: none"> Recurring devastations by flash 	Request for support from shareholders

income generating assets		floods of Rivers Nyamwamba and Mubuku (May 7 th and 10 th 2020) that debilitate income generating assets. <ul style="list-style-type: none"> • Rundown production assets that affect negatively revenue generation and resource envelop for operation & repairs 	(GoU) to rehabilitate the assets affected by swell waters. Working with Ministry of Water and Environment to have the river channels de-silted so that subsequent flash flow episodes do not again affect company assets.
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6.2.2 Other Kilembe Mines achievements in FY 2019/20

Strengthening and enhancing private-public sector and inter-sector collaboration and partnerships through

- i. Participation in the universal primary and secondary education system at KML's 3 primary and 1 secondary schools; providing infrastructure for 2 private schools and 1 tertiary institution as well as industrial training opportunities to university and institution students and guided tours to visiting entities of learning, thereby contributing to Equipping learners/students/trainees with relevant knowledge and skills necessary for socioeconomic transformation and development by 2040;
- ii. The company's ownership of and contributions to Kilembe Mines Hospital which offers hands-on to medical interns, and thereby Contributes to the production of a healthy and productive population (human capital) for wealth creation that effectively participates in socio-economic growth
- iii. Participate in implementation for catchment-based water resources management and development Plans (CMPs) for Rwenzori basin to address issues that affect stakeholders and ensure protection of Company Assets and human life.
- iv. Participating in GoU's preparations and solicitation for investor to redevelop Kilembe mines.

6.2.3 Kilembe Mines Plans and Strategies for FY2021/22

- i. Carry out studies to redevelop and expand Mubuku I hydropower scheme from about 2.5MW to the planned 12.6MW in line with meeting the energy needs of Uganda population for social and economic development in an environmentally sustainable manner
- i. Focus on having exploration activities planned so as to add onto known reserves and revamp mining in line with developing the mineral sector for it to contribute

significantly to sustainable national economic and social growth under the Vision 2040;

- ii. Commit resources towards redevelopment of the Liaison office on Clement Hill road at Nakasero, Kampala Capital City Authority so as to create conducive environment for staff to deliver better as well as diversify and enhance revenue income.

7. CONCLUSION

Despite the challenges in the Sector and the impact of Covid-19, there is steady progress in project implementation.

Electricity will be extended to all sub-county headquarters by end of FY2020/21 which will greatly increase electricity access rates to within the NDP III targets.

Karuma Hydropower Project Construction is progressing steadily with commissioning of all units expected before end of FY 2020/21.

Refinery development is on course. The lead investor for the refinery is undertaking FEED and the PFA has been extended for 17 months.

The HGA for East African Crude Oil Pipeline (EACOP) was signed by the Government and EACOP and this paves way for attainment of FID.

In the Mineral sector, a Policy has been put in place and the development of Sukuru Phosphates plant is nearing completion, while airborne mapping of Karamoja will soon commence.

There is therefore an urgent need to overcome the following key challenges.

- i. Land Acquisition for government projects.
- ii. Funding in general for energy and mineral development infrastructure projects.
- iii. Enhancement of capacity and supervision of inspection in the mineral sector.

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