THE REPUBLIC OF UGANDA

Semi-Annual Budget Monitoring Report

Financial Year 2014/15

Energy Sector

April 2015

Ministry of Finance, Planning and Economic Development
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ABBREVIATIONS AND ACRONYMS

AAPG	Association of American Petroleum Geologists
AC	Alternating Current
ADB	African Development Bank
ADF	African Development Fund
AFD	French Agency for Development
AG	Albertine Graben
APL	Adaptable Program Loan
BFO	Best and Final Offers
BOQS	Bills of Quantities
CAA	Civil Aviation Authority
CCCC	China Communication Construction Company
CDAP	Community Development Action Plan
CGV	Chief Government Valuer
CNOOC	Chinese National Offshore Oil Company
CRS	Corporate Social Responsibility
CTCN	Climate Technology Center and Network
CWE	China International Waters and Electric Corporation
D	Dimension
DCPT	Dynamic Cone Penetration Test
DED	German Development Service
DHO	District Health Officer
DLGs	District Local governments
DRC	Democratic Republic of Congo
E&P	Exploration and Production
EA	Exploration Area
EAC	East African Community
EAP	Energy Advisory Project
EAPCE	East African Petroleum Conference and Exhibition
EIA	Environmental Impact Assessments
EIPL	Energy Infratech Private Ltd,
EPC	Engineering Procurement and Construction
ERA	Electricity Regulatory Authority
ERD	Energy Resources Department
ERT	Energy for Rural Transformation
ESDP	Electricity Sector Development Project
ESMP	Environment and Social Management Plan
ESPS	Energy Saving Providers
ESS	Energy Saving Stoves
EU	European Union
EVT	Escape and Ventilation Tunnel
EXIM	Export Import
FAT	Factory Acceptance Tests
FDPs	Field Development Plans
FEED	Front End Engineer Designs

FEED	Front End Engineering Design
FESL	Ferdsult Engineering Services Limited
FGDs	Focus Group Discussions
FY	Financial Year
GBOBA	Global Partnerships on Output Based Aid
GIS	Geographical Information System
GIZ	German Agency International Cooperation
GIZ	Deutsche Gesellschaft fuer Internationale Zusammenarbeit
GoU	Government of Uganda
Ha	Hectare
HC	Health Centre
HOCADEO	Hoima Caritas Development Organization
HPP	Hydro Power Plant
HPP	Hydro Power Plant
HSE	Heath Safety and Environment
HV	High Voltage
ICAO	International Civil Aviation Organization
ICT	Information/Communication Technologies
IDA	International Development Agency
IFMS	Integrated Financial Management System
IVA	Independent Verification Agent
JBIC	Japan Bank for International Cooperation
JICA	Japan International Cooperation Agency
Ken Gen	Kenya Electricity Generating Company Limited,
KfW	German Financial Cooperation (KfW Bankengruppe)
KIL	Kilembe Investment Limited
KIP	Karuma Interconnection Project
KNNN	Kigogole-Ngege-Nsoga- Ngasa
KNNN	Kigogole-Ngege-Nsoga- Ngasa
kV	Kilo Volts
kVA	Kilo Volt Amperes
KW	Kasamene-Wahrindi
LDC	Licensed Distribution Company
LV	Low Voltage
M&E	Monitoring and Evaluation
MAT	Main Access tunnel
MEMD	Ministry of Energy and Mineral Development
MFPED	Ministry of Finance, Planning and Economic Development
MHP	Micro Hydro Power
MoU	Memorandum of Understanding
MPS	Ministerial Policy Statements
MT	Metric Tonnes
MVar	Mega Volt Ampere
MW	Mega Watt
NARO	National Agricultural Research Organisation
NBI	National Backbone Infrastructure
NCC	National Contracting Company

NDP	National Development Plan
NELSAP	Nile Equatorial Lakes Subsidiary Action Programme
NEMA	National Environment Management Authority
NGOs	Non-Government Organizations
NITA-U	National Information Technology Authority- Uganda
NOC	National Oil Company
NOGP	National Oil and Gas Policy
NORAD	Norwegian Agency for Development Cooperation
NUSAF	Northern Uganda Social Action Fund
NWSC	National Water and Sewerage Corporation
OBA	Output Based Aid
OBT	Output Budgeting Tool
OfD	Oil for Development
OPM	Office of Prime Minister
PAP	Project Affected Person
PAU	Petroleum Authority Uganda
PCC	Plain Cement Concrete
PDPs	Physically Displaced and Vulnerable People
PECMEC	Pader-Abim Community Multipurpose Electric Cooperative Society
PEPD	Petroleum Exploration and Production Department
PIP	Public Investment Plan
PRDP	Peace Recovery and Development Plan
PREEEP	Promotion of Renewable Energy and Energy Efficiency Programme
PREPs	Priority Rural Electrification Projects
PRR	Petroleum Reservoir Reports
PSA	Production Sharing Agreement
PV	Photo Voltaic
Q	Quarter
RAP	Resettlement Action Plan
RDP	Refinery Development Program
REA	Rural Electrification Agency
RESP	Rural Electrification Strategy and Plan
ROW	Right of Way
SEG	Society of Exploration Geophysicists
SMEs	Small and Medium Enterprises
SWH	Solar Water Heaters
TOPL	Tullow Uganda Operations Pty Limited
TPDC	Tanzania Petroleum Development Corporation
TUOPL	Tullow Uganda Operations Pty Limited
UA	Unit of Account
UEDCL	Uganda Electricity Distribution Company Limited
UETCL	Uganda Electricity Transmission Company Limited
UIA	Uganda Investment Authority
UNBS	Uganda National Bureau of Standards
UNCST	Uganda National Council of Science and Technology

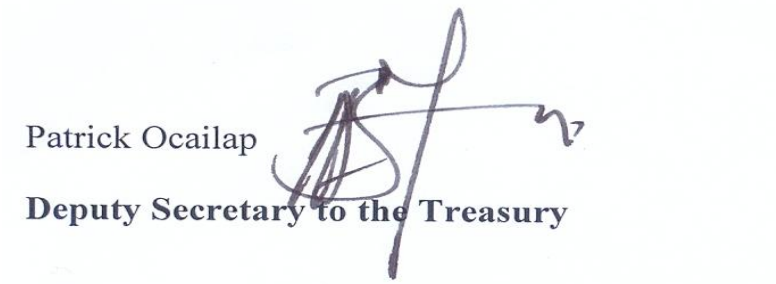
UNEP	United Nations Environmental Program
UNFCCC	United Nations Framework Conventional for Climate Change
UNRA	Uganda National Roads Authority
UNU-GTP	United Nations University Global Training Programme
US$	United States Dollar
UWA	Uganda Wildlife Authority
VAT	Value Added Tax
VF	Vote Function
WENRECO	West Nile Rural Electrification Company

FOREWORD

The government has increasingly channeled resources into implementation of public programmes aimed at enhanced service delivery. Effective implementation of these programmes is critical and this calls for monitoring and evaluation.

The Budget Monitoring and Accountability Unit in the Ministry of Finance, Planning and Economic Development makes semi-annual performance assessments on the progress of implementation for selected programmes. This report reviews the half year performance in the priority areas of: Agriculture, Education, Energy, Health, ICT, Industrialization, Public Sector Management, Roads, and Water and Environment for FY 2014/15.

The findings therein should inform implementation decisions in the last half of the year. I urge all institutions to follow up on the related implementation issues that have been identified. The implementation challenges and recommendations made will guide the relevant sectors to ensure enhanced effectiveness of programme implementation.



EXECUTIVE SUMMARY

BACKGROUND

This report reviews selected key vote functions and programmes within the sectors, based on approved plans and significance of budget allocations to the votes. The focus is on nine sectors, including: agriculture, education, energy, health, industrialization, ICT, public sector management, roads; and water and environment. Attention is on large expenditure programmes with preference given to development expenditures, except in the cases of education, health, ICT, public sector management and roads where some recurrent costs are tracked.

Projects selected for monitoring were based on regional sampling, level of capital investment, planned quarterly output, and value of releases by the second quarter of FY 2014/15. The methodology adopted for monitoring included literature review of quarterly progress and performance reports; interviews with the respective responsible officers or representatives of programmes; and observations at site.

FINDINGS

Introduction

A total of 13 projects from the two Votes in the Energy sector were monitored. Under Ministry of Energy and Mineral Development (MEMD), the following were reviewed: Promotion of Renewable Energy and Energy Efficiency (PREEE), Modern Energy from Biomass for Rural Development; Karuma interconnection Project, Mbarara-Nkenda/ Tororo-Lira-Opuyo Transmission line; Bujagali Switchyard Upgrade; Karuma Hydropower Plant, Isimba Hydropower Plant. Others were; Management of Oil and Gas Sector in Uganda, Construction of the oil refinery, Uganda Geothermal Resources Development, Airborne Geophysical Survey and Geological Mapping of Karamoja.

Under Rural Electrification Agency (REA), the West Nile Grid Extension Program, and Rural Electrification Project were reviewed.

Performance

Overall performance for the sector was fair as was the case for FY 2013/14. Resources in a number of projects sampled were used to achieve project outputs. These include;

- **The Management of Oil and gas sector in Uganda.** A total of Ug shs1.997 billion was spent on capacity building while Ug shs 1.493 billion was spent on Government Buildings and Service Delivery Infrastructure. This comprised approximately 60% of project expenditure. A total of eight staff commenced Masters Degree programs. Construction of the data centre was 95% complete. Other works ongoing that progressed well at the Kingfisher Oilfield included; construction of the access road; and construction of the camps and materials yard that stores equipment including rigs and drilling pipes.

- **Construction of the Oil Refinery:** A total of Ug shs 31.367 GoU funds was released to the project. The project spent Ug shs 29 billion (95%) of expenditure on land compensation for the project. By the end of Q2 FY 2014/15, 72% of the Project Affected Persons (PAPs) had been compensated of their property. A total of 533.59 acres of land was purchased to resettle vulnerable Physically Displaced Persons (PDPs) who preferred in kind compensation.

- **Implementation of planned outputs for Karuma Hydropower plant was progressing well**. Procurement for a consultant to construct resettlement houses and relocated social institutions was underway. Construction of the hydropower plant was however at a slow pace as 8% had been achieved against the targeted 20% completion.

There were several challenges that constrained implementation of the energy sector interventions and led to lower outputs than expected.

1. Delay in Karuma Hydropower plant was affected by the limited compliance by the contractor to issues raised by the consultant. Delays in conclusion of the financing agreement between the China's Exim bank and GoU delayed Karuma Hydropower plant, Karuma Interconnection project, and the Electrification of Industrial Parks project.
2. Delays in the procurement process in the Biomass project, PREEEP, the UETCL projects and the minerals subsector. A number of projects in the Biomass project had not yet started as they were still under the procurement process.
3. Procurement of a consultant to develop a Monitoring and Evaluation strategy for the national oil and gas policy was still under review by the contracts committee. Other projects that were delayed by the procurement process include; Uganda Geothermal Resources Development and Airborne Geophysical Survey and Geological mapping of Karamoja.
4. Delayed acquisition of the Right of Way for projects implemented by the UETCL, MEMD and the petroleum subsector. Affected projects included; Karuma Interconnection Project, Mbarara-Nkenda/Tororo-Lira/Opuyo transmission line, and Electrification of Industrial parks Projects. The major reasons highlighted for the delays included; disputes arising from low compensation packages, rejection of compensation packages by PAPs in the same geographical area affected by two UETCL projects as a result of issuance of different valuation rates, and non-willingness of landlords for big pieces of land to be compensated to enable project implementation.
5. Poor prioritization and therefore limited funding for the Modern Energy from Biomass for Rural Development project. The contribution of biomass to energy production has not been appreciated. The project was off target by end of Q2. Development of Biofuel, biogas standards and bio-fuel regulations was at 10% progress.
6. Rural Electrification projects have been delayed by delayed payments to the contractors. Physical Performance for all grid extension projects were behind schedule.

Recommendations

1. The procurement unit of the UETCL, MEMD should initiate and expedite procurements early enough to enhance timely funds absorption of funds.
2. The District Land Boards should review the land rates regularly to avoid issues of low compensations due to use of old rates for valuation of land.
3. The ministry of Energy and mineral Development should support the Modern Energy from Biomass for Rural Development project to achieve its project outputs.

CHAPTER 1: BACKGROUND

The mission of the Ministry of Finance, Planning and Economic Development (MFPED) is *"To formulate sound economic policies, maximize revenue mobilization, ensure efficient allocation and accountability for public resources so as to achieve the most rapid and sustainable economic growth and development"*. It is in this regard that the Ministry gradually enhanced resource mobilization efforts and stepped up funds disbursement to Ministries, Departments, Agencies and Local Governments in the past years to improve service delivery.

Although significant improvements have been registered in citizens' access to basic services, their quantity and quality remains unsatisfactory, particularly in the sectors of health, education, water and sanitation, agriculture and roads. The services being delivered are not commensurate to the resources that have been disbursed, signifying accountability and transparency problems in the user entities.

Although there are several institutions in the accountability sector mandated to monitor and audit public resources, they have not provided comprehensive information for removing key implementation bottlenecks to enhance transparency and accountability and consequently improve service delivery. It is against this background that the Budget Monitoring and Accountability Unit (BMAU) was established in FY 2008/09 in the Ministry of Finance, Planning and Economic Development, under the Budget Directorate, to address this challenge.

The BMAU is charged with tracking implementation of selected government programmes or projects and observing how values of different financial and physical indicators change over time against stated goals and targets. This is achieved through regular field monitoring exercises to verify receipt and application of funds by the user entities. Where applicable, beneficiaries are sampled to establish their level of satisfaction with the service.

The BMAU prepares semi-annual and annual monitoring reports of selected government programmes and projects. The monitoring is confined to levels of inputs, outputs and intermediate outcomes in the following areas:

- Agriculture
- Infrastructure (Energy and Roads)
- Industrialization
- Information and Communication Technologies
- Social services (Education, Health, and Water and Environment)
- Microfinance; and
- Public Sector Management

CHAPTER 2: METHODOLOGY

2.1 Process

This report is based on selected programmes from the sectors mentioned in chapter one apart from microfinance. The selection was based on a number of criteria;

- Programmes that submitted progress reports by the end of quarter two, FY 2014/15 were followed up for verification as they had specified output achievements.
- Priority expenditure areas in the budget strategy and ministerial policy statements for FY 2014/15 with focus being on large expenditure programmes.
- Regional representation to ensure that coverage of programmes is from varying parts of the country
- Programmes/projects with previously identified critical implementation problems.

2.2 Methodology

The key variables monitored were targets of inputs and outputs; implementation processes and achievement of intermediate outcomes and beneficiary satisfaction where feasible.

2.2.1 Data Collection

Data was collected through a combination of approaches;

- Review of secondary data sources including: Ministerial Policy Statements for FY 2014/15; National and Sector Budget Framework Papers; Sector project documents and performance reports in the Output Budgeting Tool (OBT), MFPED Budget Documents, Budget Speech, District Performance Reports; Q1 and Q2 Sector Quarterly Progress Reports, Work plans, and Public Investment Plans.
- Review and analysis of data in the Integrated Financial Management System (IFMS) and legacy system; progress reports (Performance Form A and B) and bank statements from implementing agencies.
- Consultations and key informant interviews with project managers in implementing agencies both at the Central and Local Government level.
- Field visits to project areas involving observations and discussions with beneficiaries. Photography was a key data collection tool during the monitoring exercise. In some cases call-backs were done to triangulate information.

2.2.2 Sampling

The projects/programmes monitored were purposively selected from information provided in the FY 2014/15 Ministerial Policy Statement and Quarterly Performance Reports for Q1 and Q2. Priority was given to outputs that were physically verifiable especially those categorized under GoU development expenditure.

Districts in different regions were selected so that as many regions of Uganda as possible are sampled throughout the year. Emphasis was also placed on programmes not monitored in previous quarters. For completed projects, monitoring focused on utilization, quality and beneficiary satisfaction.

2.2.3 Data Analysis

This was mainly simple descriptive statistics of comparing set targets and observed levels of achievement. Physical performance of projects and outputs was assessed through comparing a range of indicators and linking the progress to reported expenditure. The actual physical achievement was determined basing on (weighted) number of activities accomplished for a given output.

2.3 Limitations of the report

- Overstated absorption of some projects due to transfers to subventions being reflected as payments on the Integrated Financial Management System (IFMS).
- Assumption that warrants on IFMS are equal to the release. This also provides misleading information on financial performance.
- Difficulty in ascertaining financial performance of some donor projects due to unavailability of information from project managers. It was also equally difficult to ascertain financial performance of projects off the IFMS.
- Lack of clear indicators, in some programmes, hence difficulty in rating overall performance.
- Unavailability of some critical information. For example, a number of project recipients had limited information on scope of civil works, costs and contract period.
- Sampling of some projects/programmes was affected by misleading information from ministries. Some projects that were reported as implemented in FY 2014/15 had been done in FY 2013/14.

2.4 Assessment Criteria

For purposes of this report, the guide below is used to assess and rate performance.
Physical and financial performance was rated in percentages according to achievement of the planned set targets and the overall utilization of funds for multi-year projects. Table 2.1 shows the assessment criteria for measuring the achieved targets and expenditures.

Table 2.1: Assessment criteria for measuring achieved targets

SCORE	***COMMENT***
80% and above	*Excellent (All set targets achieved and funds well utilized)*
70% - 79%	*Very good (Most of the set targets achieved and funds absorption is 70% and above)*
60% - 69%	*Good (Some core set targets achieved and funds absorbed to 60%)*
50% - 59%	*Fair (Few targets achieved and funds absorption is average-50%)*
Less than 50%	*Below average (No targets achieved and funds absorption is less than 50%)*

Source: BMAU

CHAPTER 7: ENERGY

7.1 Introduction

7.1.1 Energy Sector Priorities

The energy sector comprises of two votes. These are: Ministry of Energy and Mineral Development (Vote 017), and Rural Electrification Agency (REA)-Vote 123.

The energy sector priority areas include;

i. Increase electricity generation capacity and transmission network.
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 achieve national production.
iv. Develop petroleum refining and pipeline transportation infrastructure.
v. Streamline petroleum supply and distribution; and
vi. Promote and regulate mineral exploration, development, production and value addition[1]

Within the sector priorities, special attention is given to the following two flag bearer projects:

i) Development of Karuma Hydropower project
ii) Development of the oil refinery

7.1.2 Scope of the chapter

The chapter presents progress on the implementation of selected projects by MEMD and its agencies up to Q2 FY 2014/15. The monitoring focused on 11 projects in four vote functions under the MEMD vote, and two projects in the REA vote. It assesses the efficiency and effectiveness of selected development projects in the energy and minerals sector.

The projects that were monitored are listed in table 7.1

Table 7.1 Energy Sector projects monitored in FY 2014/15

Output and Component	**Location**
Vote 017: Ministry of Energy and Mineral Development	
Vote Function (VF) 0301: Energy Planning, Management and Infrastructure Development	
Project: 1023: Promotion of Renewable Energy and Energy Efficiency (PREEE)	Lira, Dokolo, Kaberamaido, Yumbe
Project 1198: Modern Energy from Biomass for Rural Development	Apac, Kitagobwa
Project 1025: Karuma Interconnection Project (KIP)	Lira, Oyam,
Project 1137: Mbarara-Nkenda/Tororo-Lira	Mbarara, Kasese, Kabarole, Mbale, Bukedea,

[1] MEMD Ministerial Policy Statement 2014/15 (Kampala 2014)

Output and Component	Location
Transmission Lines	Kumi, Soroti
Project 1024: Bujagali Interconnection Project/Bujagali Switchyard Upgrade	Jinja
Vote Function 0302 Large Hydropower Infrastructure	
Project 1183: Karuma Hydropower plant	Kiryandongo
Project 1143: Isimba Hydropower plant	Kayunga
Vote Function 0303 Petroleum Exploration Development Production (PEDP)	
Management of Oil and Gas Sector in Uganda	Entebbe, Hoima, Buliisa
Construction of the Oil Refinery	Hoima
Vote Function 0305: Mineral Exploration, Development and Production	
Project 1199: Uganda Geothermal Resources Development	Entebbe[2]
Project 1200: Airborne Geophysical Survey and Geological Mapping of Karamoja	Entebbe[3]
Vote 123: Rural Electrification Agency	
0351: Rural Electrification	
Project 1261: West Nile Grid Extension program-GBOBA	Abim, Pader, Mbale, Bududa, Iganga, Kasese, Rubirizi, Bundibugyo, Ntoroko, Kabarole
Project 1262: Rural Electrification project	Lira, Apac, Soroti, Bundibogyo, Kasese, Kamwenge, Rubirizi, Ntungamo

Source: Author

7.1.5 Sector Budget Allocation and Financial Performance

The approved development budget for the Energy and Minerals sector for FY2014/2015 including donor is Ug shs 1,857.083 billion. The MEMD Vote took up 95% while REA Vote took up 5% of the development budget of the sector. Table 7.2 summarizes the financial performance of the Energy and Minerals sector.

TABLE.7.2: FINANCIAL PERFORMANCE OF ENERGY AND MINERALS SECTOR

Vote	Approved Development Budget (Ug shs billion	Release (Ug shs billion)	Expenditure	Release Performance	Expenditure Performance
MEMD	1,759.703	397.131	389.325	23%	98%
REA	97.380	44.210	36.760	45%	83%

[2] The monitoring team held meetings in Entebbe
[3] Ibid

Totals	1,857.083	441.341	426.085	24%	97%

SOURCE: REA AND MEMD

The low release performance for the MEMD was attributed to the low release of funds for the Karuma HPP, which took a large share (1,096 billion - 84%) of the ministry development budget. Overall, release performance was below average while absorption rates were excellent.

7.1.6 Overall Physical Performance of the Sector

Overall, physical performance was on average fair across all projects. Projects that performed well include; management of oil and gas sector in Uganda and construction of the refinery. The project with the least performance was Modern Energy from Biomass for Rural Development 1198. Resources in a number of projects sampled were used to achieve project outputs. These include;

The Management of Oil and gas sector in Uganda. The key target of putting place institutional arrangements and capacities was achieved. Construction of the data centre was 95% complete. This building will accommodate the new Petroleum Directorate, which includes the Upstream, Midstream and Downstream Departments as well as the Petroleum Authority of Uganda. Other achievements included; construction of the access road to the Kingfisher Oilfield and construction of the camps and materials yard that stores equipment including rigs and drilling pipes.

Construction of the Oil Refinery: Seventy two percent (72%) of the Project Affected Persons (PAPs) had been compensated for their property. A total of 533.59 acres of land was purchased to resettle vulnerable Physically Displaced Persons (PDPs) who preferred in kind compensation. The poor performance was notable under the Biomass for rural development project. By the end of half year approximately 80% of the planned outputs were either still under procurement or awaiting clearance from the accounting officer.

The low physical performance was largely due to delayed:

i) Delayed finalization of the financing agreement with development partners affected progress of Karuma Hydropower Plant, Karuma Interconnection Project, and Electrification of Industrial Parks Project
ii) Delayed completion of procurement process in the Modern Energy from Biomass for Rural Development Project, PREEEP, Karuma Interconnection Project, Uganda Geothermal Resources Development and Airborne Geographical Survey, and Geological Mapping of Karamoja.
iii) Delayed acquisition of the Right of Way (ROW) for projects; Karuma Interconnection, Mbarara-Nkenda/ Tororo-Lira-Opuyo transmission line; Electrification of Industrial Parks
iv) Poor prioritization and therefore limited funding for the Modern Energy from Biomass for Rural Development Project.
v) Delayed disbursement of advance payment to the Rural electrification contractors particularly those funded by BADEA

Performance of the Energy and Mineral Sector Votes

The section presents the projects monitored under the vote.017- Ministry and Energy and Mineral Development and vote.123 - Rural electrification Agency.

7.2 Vote 017: Ministry of Energy and Mineral Development

The mandate of the Ministry of Energy and Mineral Development (MEMD) 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*"

The MEMD financial performance

The approved development budget for the MEMD in FY2014/15 is Ug shs 1,759.703 billion of which 23% was released and 98% expended. The low release performance was attributed to the zero release of funds from the donor component. A summary of financial performance is presented in the table 7.3 below.

TABLE.7.3: FINANCIAL PERFORMANCE OF MEMD

Source	**Approved Development Budget Ug shs (billion)**	**Releases Ug shs (billion)**	**Expenditure Ug shs (billion)**	**Release Performance**	**Expenditure Performance**
GoU	1,291.104	397.131	389.325	31%	98%
Donor	468.599	0	0	0%	0%
Total	1,759.703	397.131	389.325	23%	98%

SOURCE: MEMD

Ministry of Energy and Mineral Development Vote functions composition

The vote comprises of six vote functions namely: Energy Planning, Management and Infrastructure Development; Large Hydropower Infrastructure; Petroleum Exploration Development and Production; Mineral Exploration Development and Production; Petroleum Supply, Infrastructure and Regulation; and Policy, Planning and Support Services. Monitoring focused on four vote functions as follows:

Vote Function 0301: Energy Planning, Management and Infrastructure Development

The Vote function (VF) is responsible for promoting; increased investment in power generation, renewable energy development, rural electrification, improved energy access, energy efficient

technologies, and private sector participation in the energy sector.[4] The vote function took up 9% of the energy sector budget.

The VF comprises of 16 projects. These are: Energy for Rural Transformation (ERT); Support to Thermal Generation; Promotion of Renewable Energy and Energy Efficiency; Bujagali Interconnection Project; Karuma Interconnection Project, Mputa Interconnection Project; Mbarara-Nkenda/ Tororo-Lira Transmission Lines; Nile Equatorial Lakes Subsidiary Action Programme.

Others are; Hoima-Kafu Interconnection; UETCL/ Statnett Twinning Arrangement (Phase II); Modern Energy from Biomass for Rural Development; Electricity Sector Development Project; Opuyo-Moroto Interconnection Project; Electrification of Industrial Parks, Mirama-Kikagati-Nshungyenzi Transmission Line; Kampala-Entebbe Expansion Project. A total of seven projects were monitored.

7.2.1 Project 1023: Promotion of Renewable Energy and Energy Efficiency (PREEE)

Background

The bilateral cooperation in the energy sector between GoU and Federal Republic of Germany dates back to June 1999 when the two governments initiated Energy Advisory Project (EAP). The MEMD implemented the EAP with technical support from GTZ. When EAP closed in 2008, one of the programmes initiated was PREEEP. The main objective of the project is to improve access to modern energy services and the efficient use of energy by households and the private sector, especially in Northern Uganda.

The expected outputs of the project by year 2017 included;

- 150,000 improved household stoves disseminated
- 400 improved institutional stoves disseminated
- 1,000 solar home systems disseminated
- 100 solar institutional systems disseminated
- At least 350,000 tons of wood saved each year

Annual planned outputs for FY2014/15

Output 030101: Energy Policy/ plans Dissemination, Regulation and Monitoring

- Policy for fuel efficiency in the transport sector formulated.
- Monitoring and Evaluation (M&E) tool for energy projects developed.
- Technical support offered to the Electrical Power, Renewable Energy and Energy Efficiency activities

Output 030102: Energy Efficiency Promotion

- Small and Medium Enterprises (SME) Programme on identified energy efficient technologies and financing opportunities conducted.
- Energy Audits conducted for four public institutions.

[4] MEMD *Ministerial Policy Statement 2014/15* (Kampala 2014)19

- Energy Management and auditing training conducted for energy managers, consulting engineers, public institutions and industrialists conducted.
- Implementation of the Voluntary Programme on Energy Efficient Standards and Labels for five (5) appliances (fridges, freezers, AC, electric motors, lighting appliances and air conditioners) started.
- Energy Week 2014 and associated activities held.
- Energy awareness materials on efficient use of energy for households, industries, hotels, commercial buildings, schools and colleges developed

Output 030103: Renewable Energy Promotion

- Energy efficient cooking technologies promoted through dissemination of efficient institutional and household cookstoves and training of artisans.
- Five micro hydropower Sites less than 100KW identified for development.
- Operations of Bwindi and Suam micro hydropower projects monitored.
- Solar Water Heaters (SWHs) rehabilitated at Lira and Mbale referral hospitals refurbished
- Wind energy technologies promoted through collection and dissemination of wind data on speeds and applications (mills and water pumping).
- Existing wind mills for water pumping studied and packaged for rehabilitation.

Output 030177: Purchase of Specialized machinery and Equipment

- Ten small wind energy systems procured
- Two wind measuring equipment procured
- Computers for wind data procured

Performance of all outputs was reviewed.

Financial performance

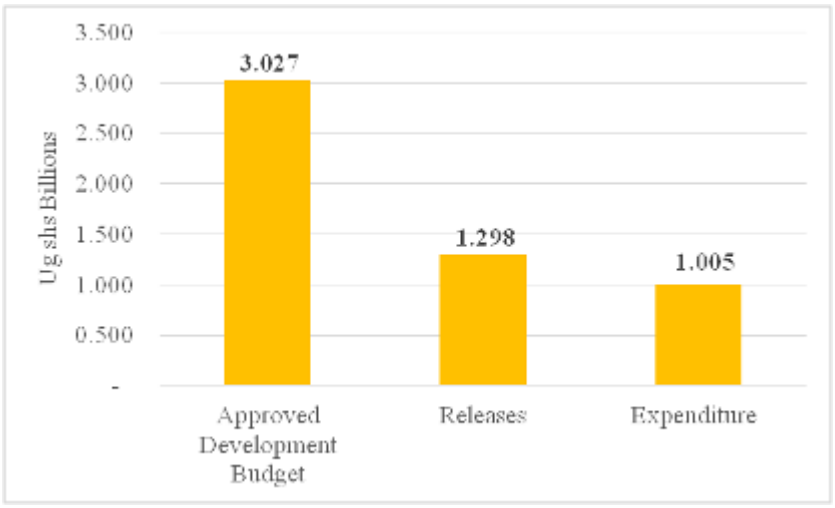
The GoU and GIZ jointly finance the project.

a) The GoU Funding

The GoU development approved budget for FY2014/15 is Ug shs 3.027 billion, of which 43% was released by the end of December 2014. This was an excellent release performance. The project absorbed 77% of the released funds, which was very good (Figure 7.1).

The line item of machinery and equipment took 30% of the expenditure. The other bulk of expenditure was made on Consultancy Services- Short Term (18%), Travel Inland (13%), Consultancy Services- Long-Term (8%), Fuel, Lubricants and Oils (7%), and Contract Staff Salaries (Incl. Casuals, Temporary) (6%). Other line items took up a share of 1%.

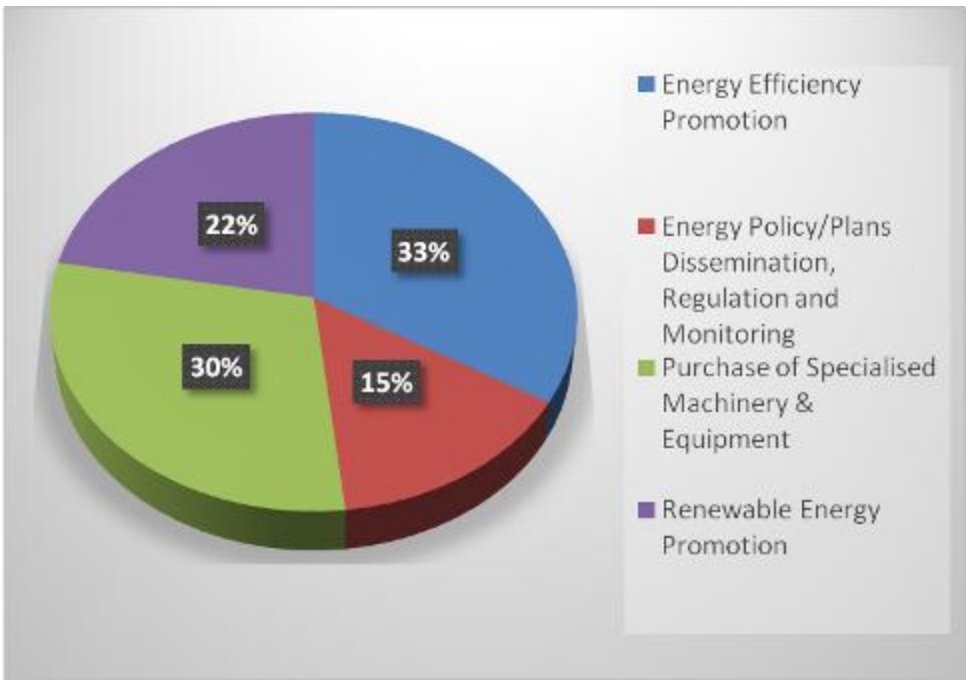
Figure 7.1: Financial performance for Project 1023



SOURCE: IFMS DATA

Analysis of expenditure by output category indicated that majority of expenditure was made on Energy Efficiency Promotion (33%) while Purchase of Specialized Machinery and Equipment took up 30% expenditure. The other outputs categories as seen in Figure 7.2 took up a less share of the expenditure.

Figure 7.2: Distribution of Expenditure by output name category



SOURCE: IFMS DATA

b) The GIZ Funding

A total of Euros 920,000 worth of technical cooperation was provided for the period between July and December 2014. The support aims to improve the framework conditions for the access to renewable energy and efficient energy consumption in industries and households. The GIZ

funding focuses on 3 major areas: Energy Policy Support, Access to Energy, and Climate Change Mitigation[5].

Physical performance

Table 7.4 outlines the planned outputs for the PREEE project as outlined in the MEMD work plan. Physical performance is summarized against the output. Overall performance of the project was good as progress was reported to be made on 64% of the outputs.

Table 7.4: Physical Performance of Project 1023 (PREEEP)

Annual Planned output	Achievement by December,2014
03 0101 Energy Policy/Plans Dissemination, Regulation and Monitoring	
Policy for Fuel Efficiency in Transport Sector Formulated.	Concept note for the fuel efficiency programme was finalized and preparations were under way for the consultative workshops on Fuel Efficiency Policy.
Monitoring and Evaluation (M&E) Tool for Energy Projects Developed.	The Terms of Reference were being finalized for the consultant to develop the M&E Tool for Energy Projects before proceeding for procurement of consultant.
Technical Support to the Electrical Power, Renewable Energy and Energy Efficiency Activities offered	Technical support was provided for stoves designing and construction, and production of awareness materials for energy efficiency improvements.
03 0102 Energy Efficiency Promotion	
SME Programme on identified energy efficient technologies and financing opportunities conducted.	Update not given
Energy Audits for four (4) Public Institutions conducted.	Participating Facilities identified and inception workshop for facilities in Eastern region conducted on 12th August 2014 at Sunset Hotel International Jinja. Energy Audit Conducted for Source of the Nile Hotel Jinja from 13th to 16th August2014 and Amber House in December 2014.
Energy Management and Auditing Training conducted for energy managers, consulting engineers, public institutions & industrialists	Procurement process for a consultant to conduct the Energy Management and Auditing Training for energy managers, consulting engineers, public institutions and industrialists are on-going.
Energy awareness materials on efficient use of energy for households, industries, hotels,	Energy awareness materials on efficient use of energy for households, industries, hotels, commercial buildings, schools and colleges was produced and disseminated during the

[5] GIZ (2015)GIZ PREEEP Annual Report

Annual Planned output	Achievement by December,2014
commercial buildings, schools and colleges developed	energy week 2014. Dissemination Continues
Implementation of the Voluntary Programme on Energy Efficient Standards and Labels for five appliances (fridges, freezers, AC electric motors, lighting appliances and air conditioners) started.	Importers guide on the Energy Efficient Standards and Labels for the five (5) appliances (Fridges, Freezers, AC Electric Motors, Lighting Appliances and Air conditioners) produced and approved by MEMD and UNBS. A list of identified participating firms in the Implementation of the Voluntary Programme on Energy Efficient Standards and Labels has been compiled
Energy Week 2014 and associated activities Held	Energy Week 2014 was held from 8th to 13th September 2014. The energy week 2014 had activities which included; the exhibition at Forest Mall from 8th to 13th September 2014, Sustainable energy forum on 10th September 2014. Impact of the Energy Week 2014 was evaluated and included in the Energy Week Report.
103Renewable Energy Promotion	
Energy efficient cooking technologies promoted through dissemination of efficient institutional and household cook stoves and training of artisans.	Draft stove construction manual produced, beneficiary institutions selected (11 schools), two people and cooks from each school to be attached to the contractor training and piloting the use of twin stoves. Construction of Institutional Cook stoves was on-going in 11 schools. These were (Everrest Girls SS in Oyam district, Hill Side Annex Primary School and Lango College SS in Lira District. Others were; Masindi Army SS in Masindi District; Kisojo SS in Kyenjojo district, Mt. Rwenzori Girls SS ,and Standard High School in Kasese, Fort Port SS in Kabarole district, King Solomon college Kyatega in Kyegegwa district, Uganda Martyrs SS, Kayunga district, and Ntare School in Mbarara District.
Five (5) Micro Hydropower Sites less than 100KW identified for Development.	Preparations for Field surveys to identify Micro hydro power sites less than 100kW in Rwenzori Ranges in Kasese and Mt. Elgon on-going.
Operations of Bwindi and Suam Micro-Hydropower Projects Monitored.	Monitoring of the Operations of Bwindi and Suam Micro-Hydropower Projects was done. Bwindi was operational while Suam was not.
Solar Water Heaters (SWHs) rehabilitated at Lira and Mbale Referral Hospitals Refurbished	One large solar water heating system on operation theatre was refurbished Monitoring exercise for SWH at Lira and Mbale Referral Hospitals done to evaluate performance
Wind Energy Technologies Promoted through Collection and Dissemination of Wind Data on Speeds and Applications (mills and water pumping).	Procurement of the Contractor to carry out the data collection was finalized and is waiting contract signing.

Annual Planned output	Achievement by December,2014
Existing Wind Mills for Water pumping studied and packaged for rehabilitation.	One wind mill for water pumping at church of Uganda diocese at Kotido was refurbished and now pumping water
03 0177 Purchase of Specialized Machinery & Equipment	
Ten small wind energy systems procured	Seven small wind energy demonstration systems installed in Karamoja, around shores of Lakes; Victoria and Kyoga, and Mityana district
Two wind measuring equipment procured	Contract for supply and installation of wind measuring equipment signed and contractor works yet to commence.
Computers for wind data procured	Update not given

Source: MEMD

Field findings

During half-year performance monitoring, focus was on solar package installations in health centers; dissemination of energy saving stoves, and mainstreaming of energy issues at the district level.

a) **Solar package installations in health centers**

The main objective of the project component was to support Local Governments and social institutions acquire and utilize solar PV systems to improve service delivery. The MoU was signed between District Local governments (DLGs) and GIZ in 2012. The districts were Nebbi, Zombo, Yumbe, Otuke and Dokolo. A total of 23 health centres, 4 schools and 3 sub-counties were to be served by the intervention. The DLGs were to contribute 20% of the cost while GIZ would provide 80% funding. The cost for the solar packages was for purchase installation and commissioning of solar systems.

The selection criteria for beneficiary health centers included:

- Health centers that were more than 5Km away from the national grid and needed power
- Health centers that were new and had not benefitted from any other rural electrification intervention

By December 2014, installations had been completed in one of the five districts. Monitoring of the solar package installation in health centers was done in Yumbe district where the installations had been reported complete. The district contributed Ug shs 4.2 million for each installation package in five Health Center (HC). The packages supplied by Energy Systems Limited were solar PV modules including batteries, charge controllers, inverters, wiring, and lights. The District Health Officer (DHO) noted that his office worked together with the contractors during the installations. It was observed that the installed packages could not power fridges for vaccine storage. The DHO highlighted that it was important for rural health centers to have a fridge.

Installation of Solar Energy Packages in Beneficiary Institutions

A total of five health centers that benefited from the Solar Energy Packages were monitored. These were; Ambelechu HCII in Oduravu sub county; Aliapi HCII in Kululu sub county; Mocha

HCII in Midigo sub county; Kerwa HCII in Kerwa sub county; and Lokpe HCII in Kochi sub county**.**

The health centers had an average number of 656 patients per month. The ratio of male to female patients was 2:3.

The solar energy package comprised three double solar panels; bulbs, sockets, batteries, invertors, and a delivery lamp. The delivery lamp eased delivering of mothers. The installation served both the staff house and health center.

Energy installations were made between 28th July and 28th November, 2014. Only one health centre (Kerwa HCII) out of five knew the selection criteria to benefit from the project. The staff in Kerwa HCII mentioned that the selection criteria involved; a) The only HC in the sub county; b) Conducted deliveries during day and night, and the health centre was over 20 Km away from Midigo HCIV. On average, all the health centers monitored were over 84.6km away from the main grid.

The health centers were using hurricane lamps, torches, candles for lighting at night and charcoal stoves to sterilize the equipment prior to the delivery of the package. Health workers reported that they were happy with the installed package. They were using the energy for; lighting, phone charging, power small radios, and laptops. To that effect benefits included;

- Cheaper energy;
- Easier deliveries at night and patients are no longer required to come with paraffin at night.
- Emergencies at night could easily be attended to
- Charge phones without walking long distances to the charge centres
- Ability to listen to radio without purchase of dry cells
- Improved security,
- Reduced energy expenditure on paraffin at the health centre,

Health centres were spending an average of Ug shs 50,000 per month on charcoal and paraffin prior to the intervention. There was an average reduction of 47% on energy expenditure by health centres after installation of the solar panels. This was because the HCs continue to purchase charcoal for sterilization and incineration of the refuse.

The health centres were given basic training on how to operate and maintain the equipment and was supplemented with a user manual. At the time of monitoring all the equipment was functional.

Text box 7.1 gives an assessment of the effectiveness of the installation of solar panels in Yumbe district. The areas of discussion are; beneficiary satisfaction, gender and equity and operation and maintenance. Overall, the project performance was good

Box: 7.1: Assessment of effectiveness of the solar installations in Health Centres in Yumbe District

Component	Score
Beneficiary Satisfaction/	Good

The project was meeting the objective of improved service delivery. All the five health centers visited noted increased number of patients coming to the health centers both during the day and night due to provision of the lighting. The light was most appreciated during night deliveries. The package increased presence of the health workers at the HC as they had light, were able to watch television, listen to radios and charge their phones without walking long distances to nearest charging centers. This also improved their communication.

All the five[6] health workers were satisfied with the intervention.

Component	Score
Gender and Equity	Good

In terms of equity, Yumbe is one of the districts without grid power in Uganda. All the health centers visited were more than 80km away from the national grid.

Provision of solar energy to health centres addresses gender issues such as improved deliveries. The number of deliveries increased at the health centres. On average, the female to male ratio per month was 3:2 which was good because women have higher morbidity rates.

Component	Score
Operation and	Fair

The five beneficiary Health Centers acknowledged receipt of basic training in operation and maintenance of the equipment. They noted that a user manual had been provided for reference. Most of the equipment was functional. However health workers expressed concern that in case of break downs, they would not have the capacity to rectify the systems. In health centres where the systems broke down, the contact contractors` telephone numbers were not accessible.

Source: Field Findings

[6] One health worker interviewed per HC

Left: Double Solar panel Right: Exchange Switches installed in Mocha Health Centre, Mudigo sub county;

b) Dissemination of Energy Saving cook stoves

The GoU in partnership with the GIZ is committed to improved access to modern energy services. This is achieved through dissemination of household and institutional cook stoves.

i) The GoU Support (Output: Energy Efficiency Promotion)

The MEMD selected a total of 11 schools as pilot sites for dissemination of institutional stoves. The criteria that were used to select beneficiary institutions included;

a) Ability for school to contribute 15% of the total budget in kind such as labour, sand and building materials
b) The institution had to have a speciously built kitchen
c) Desire that the school would construct more energy saving stoves on their own
d) High student population of over 250 students

Findings

Monitoring focused on three schools namely; Everest Girls SS (Oyam district), Hill side Annex Primary School day and Boarding (Lira district), and Lango College SS (Lira district); with a total population of 400, 300, and 850 students respectively.

Dissemination of the energy saving stoves in the schools was done between November and December, 2014. The constructed stoves were not in use as the students were having their holiday.

In Lango college, shoddy works on the construction of the stoves were noted. Cracks developed in the base of the fire chamber hardly a month after construction. Some parts like the chimney had not been constructed on the stove. The pictures indicate the cracks on the institutional stove constructed in Lango College.


Constructed institutional stove at Everest Girls Secondary School


Left: Stoves in old kitchen that the school was using before construction of the Institutional Stoves. Right: Newly constructed institutional stove at Hillside Annex Primary Scholl day and Boarding Lira District


Cracks on the newly constructed institutional stove at Lango College

ii) The GIZ Support on the Energy Saving Stoves

Since 2006, the GIZ has contributed to renewable energy promotion through dissemination of energy saving stoves among other interventions. Previously this was done through partnerships with NGOs who would train artisans in stoves building. In turn, the stoves builders would disseminate these stoves to households at a subsidized fee.

Starting 2012, the GIZ provides its support to the dissemination of Energy Saving stoves through a market-oriented strategy. The strategy focuses on; skills development of the stoves builders, raising awareness about energy saving technologies, creativity and marketing of energy saving products. This has been done country wide. Special attention has been given to Northern Uganda to speed up its development process. Partnerships have been done with International Life Fund (ILF) and National Cooperative Business Association (CLUSA International)

a) Partnership with ILF

Background

Beginning April 2014, the GIZ got into partnerships with International Lifeline Fund (ILF). The ILF is an NGO founded in Washington in 2003. The organization is involved in dissemination of clean cook stoves, and water and sanitation program. Under the Clean Cook Stoves program, the organization carried out an assessment in Uganda. The results indicated that 90% of households in Uganda were using open fires.

A number of problems were associated with the traditional three stones such as: burns among children, depletion of natural resources, a lot of time wasted collecting firewood and cooking which would be used to engage in other development activities.

The ILF developed an improved cook stove called the ILF Rural Wood Stove (ILFRW Stove). The cook stove is made of a mixture of clay, rice husk and mica. The stove design is based on heat transfer principle, wider combustion chamber, and narrows towards pot stand. This helps to concentrate flame towards the base of the cooking pot or sauce pan. The organization has been championing the dissemination of the IRLRW Stove in the Lango sub-region which was tested and confirmed to save 30% of the fuel used by the 3-stone fire.

Findings

The ILF has got good marketing strategies and a good factory that manufactures stoves. Therefore, the GIZ collaborated with the company to provide technical and financial support with an aim of improving the technology.

In partnership with GIZ, the ILF has developed a new product that meets the requirements to save 40% of fuel used by the 3- stone fire, takes less time for cooking, and is safer therefore risks of burns decrease, decreases depletion of forest reserves, will save rural women time, and create a healthy and safe environment.

The ILF produced its first batch of the improved product in November 2014. The product was undergoing testing and assessment.

The GIZ has helped the organization to improve efficiency from 30% to over 40%[7]. The ILF in partnership with GIZ has manufactured a total of 2000 stoves.

[7] A study conducted by Nyabyeya Forestry College on performance of ILF Rural Wood Stove.

The ILF is hoping to adopt a low cost approach. Initially the ILF used to distribute the clean cook stoves free but realized that the beneficiaries did not own the project. The organization is hoping to sell the stove at Ug shs 5,000 to promote ownership of the product by users.

b) The GIZ Partnerships with National Cooperative Business Association (CLUSA International)

Background

The GIZ provided technical support to CLUSA International. The CLUSA is an international organization, which among other things mobilizes farmers to promote conservation farming. The GIZ opted to engage CLUSA and take advantage of the numerical strength of farmers to learn how to construct market and promote use of energy saving stoves. The collaboration started in July 2014 while the partnership agreement and implementation commenced in November 2014. The project is implemented in the districts of Dokolo and Amolata. Focus was on Dokolo district as Energy Service providers were on ground constructing Energy Saving Stoves.

Findings

The GIZ provided two Energy Service Providers (ESPs) to train the farmers and supervise the construction of energy saving stoves. Construction began in December 2014. By the end of January, 2015 a total of 1500 stoves had been constructed in Amolator district. The farmers participated in collective production, marketing and sale of the energy saving stoves.

During the half-year performance monitoring, an in-depth discussion was made with the CLUSA group in Agikdak sub county, Amolatar district. The summary of the discussion concerning the construction of stoves is provided in the text box. 7.2

Box 7.2: Summary of Stoves Building project implemented by CLUSA in partnership with GIZ in Agikdak sub county in Amolator district

The group is composed of 56 members, 30 of whom are women. By the end of January, 2015 a total of 100 stoves had been constructed 80 of which were sold between December, 2014 and January, 2015. The selling price is Ug shs 4,000 for the farmers who participate in the construction and Ug shs 10,000 for the non-participants who demand for the stoves.

The ESPs and the trained famers were happy with the partnership between CLUSA and GIZ. The benefits highlighted were;

- Supplementary income to the ESPs
- Increased access to energy saving stoves
- Synergy among the farmers increases stove production

The users noted that:

- Reduced incidents of burns among children
- Time was saved during cooking
- The Energy Saving Stove reduced smoke emission

The ESPs and trained farmers highlighted challenges with the Energy Saving Stoves Project. These were;

- The excessive sunshine that led to cracking of stoves during the drying process
- Lack of storage facilities for the mass produced stoves
- Lack of transport to distant markets.
- Delay by GIZ to provide iron sheets for shed.
- Few receipt books in comparison to the number of stoves produced makes it hard to track production and sales.

Source: Field Findings

Left; ESPs displaying some of the energy saving stoves: Right; ESPs demonstrating how energy saving stoves are constructed; Agikdak sub county, Amolatar district

Background

The MEMD launched the Energy Mainstreaming Guidelines for the local governments at the Energy and Minerals Joint Sector Review 2014. Other sectors, unlike the energy sector had a focal point at the district level. This has made it difficult for the district to fully plan for the energy related issues some of which are in the other sectors. The intervention is piloted in 17districts[8].

The objective of the intervention is to improve service delivery in the District Local Government (DLG) sectors and subsectors through integration of energy issues into their sector plans, budgets, and activities level. The MEMD is encouraging each DLG to have an Energy Focal Person in place. Financial support was provided in partnership with the GIZ to support the framework structure of the Energy Mainstreaming process.

[8] Adjumani, Alebtong, Amolator,Apac,Arua,Dokolo,Koboko,Kole,Lira,Maracha,Moyo,Nebbi,Otuke,Oyam,Soroti,Yumbe, and Zombo districts

During the half year monitoring, performance review on the effort to mainstream energy issues was made for Dokolo district.

Findings

The Chief Administrative Officer had appointed the energy focal person whose substantive position is a Natural Resources Officer. The Natural Resources Officer was coordinating the energy issues in other sectors: for instance the plan to have solar panels in the packages for class room construction under the education sector.

The support that the districts received was in form of training to district planners, energy focal persons, selected health, education, production, and natural resources officers from each of the 17 pilot districts including Dokolo district. The focal persons' roles are critical in steering planning at District Local Government. By the end of December, 2014 two trainings and one workshop had been provided.

Dokolo district was in the process of integrating the energy issues into their new District Development Plans for 2015/16-2019/20, as well as the annual work plans for 2015/16.

In terms of sustainability of energy mainstreaming, the focal person reported that with the inclusion of the energy issues in the District Development Plans and Annual work plans funding would be provided. The focal person added that district council had so far exhibited goodwill and support. These would advocate and provide the funding for the activities. It was hoped that MEMD would release some funding to facilitate the activities of the energy desk at the district.

Challenges:

- Lack of funding to popularize energy issues within the local government.
- Lack of provisions in the Output Based Budgeting Tool to fully capture the energy issues in the different sectors.

Recommendations

- The MEMD should reallocate funds to mainstream energy issues in local governments
- The Renewable Energy Department of MEMD, Budget Directorate of Ministry of Finance Planning and Economic Development and Monitoring and Evaluation Department of the Office of the Prime Minister should create clear outputs, outcomes and Key Performance Indicators (KPIs) for mainstreaming energy issues in other sectoral plans that have energy component like education sector at the district level.

Analysis

Link between financial and physical performance

The project absorbed 77% of the released funds representing very good absorption rates. There was a fairly good link between financial and physical performance. All project outputs were being implemented. However, 47% of the outputs were at 20% progress and below. A total of 53% were progressing on schedule

Achievement of targets

The project performance was good as it achieved 64% of its set targets. The energy week was held from 8th to 13thSeptember, 2014. Construction of institutional stoves was also undertaken in 11 districts across the country. Energy Efficiency was promoted through provision of solar energy packages in Yumbe district. Household stoves were disseminated in the monitored districts of Lira and Amolatar. Mainstreaming of energy issues at the district level was also implemented in 16 districts in Northern Uganda.

However, there were issues of construction of substandard institutional stove in Lango College. The stove already had cracks before being used for cooking.

Conclusion

The PREEEP has performed at 64% in achieving the objective of improving access to modern energy services and the efficient use of energy by households and the private sector, especially in Northern Uganda. Efforts to mainstream energy at the local government level have picked up in Dokolo district. Installation of solar panels has been done in health centres that are far away from the grid. However, the health centres that received the solar energy package used gas fridges which were unreliable as gas could run out.

Recommendations

- The REA should fast track connection of Yumbe district to the national grid
- The MEMD in collaboration with the Ministry of health should provide solar fridges to health centres that are not yet on the grid

7.2.2 Project 1198: Modern Energy from Biomass for Rural Development

Background

Biomass fuel meets 90% of the country's primary energy needs. The rural poor and agro industries depend upon biomass fuels for their basic needs for cooking, water and heating using inefficient devices. This status can be changed realizing that biomass can be converted to modern energy that is cleaner and more efficient. This is applicable for both domestic and industrial levels[9]

Bio fuels include fuels derived from biomass conversion, as well as solid biomass such as wood, wood dust, agricultural residues, municipal solid waste, tree care waste, forest residue; liquid fuels, and various biogases[10]. However, there is little or no use of these forms of biomass[11].

Uganda's constitution, policies and development plans recognize the importance of biomass energy and recommend its sustainable supply. The constitution of Uganda (1995) as amended (2006), obligates government to "Promote and implement energy policies that will ensure

[9] MFPED (2013) Public investment Plan 2013/14-2015/16
[10] MEMD (2013) *Biomass Energy Strategy (BEST) Uganda*
[11] Ibid

people's basic needs and those of environmental preservation are met[12]. The National Development Plan 1 (NDP) aims to promote the sustainable use of renewable energy for social and Economic transformation[13].

The objectives of the project are to; i) Increase the use of indigenous and environmentally friendly fuel derived from biomass to operate a diesel engine to generate electricity for productive use ii) Introduce a gaseous fuel, producer gas for various thermal application iii) Introduce the use of biogas for cooking and for electricity generation iv) Encourage energy crop growing for production of biofuels

The project outputs by 2021 are; i) Improved rural economy and employment through rural electrification ii) Energy plantation encouraged; and iii) Decentralized minigrids powered by biomass energy sources established.

The project start date is 1st July 2011 and its expected completion date is June 2021. The budget of the project excluding taxes, arrears and obligation to international membership is Ug shs 3.93 billion for FY 2014/15.

Key performance outputs for the FY 2014/15 are highlighted in Table 7.5.

Table 7.5: Key performance outputs for the FY 2014/15

Output Code	Planned Output
030101: Energy policy/Plans, dissemination, regulation and monitoring	Biofuels standards developed Biogas standards developed Biofuels regulations developed
030103: Renewable Energy Promotion	Biogas technology at household and institutional level promoted The establishment of bio latrine technology in institutions supported The completion of 10kw biogas unit in Apac supported Large scale biogas technology for electricity generation promoted Household gasification stoves promoted Gasification for electricity generation promoted Biofuels production promoted Small scale briquetting technology promoted Large scale briquetting technology promoted
030151: Membership to IAEA	Obligations to International Renewable Energy Agency (IRENA) membership met
030179: Purchase of Office and ICT equipment, including software	Scanner purchased Laptop computers purchased Desk computers purchased
030177: Purchase of Specialized Machinery and	Biogas unit for electricity generation purchased Spares for Nyabyeya gasifier maintenance purchased

[12] Constitution of Uganda as at 15th February, 2006 (Section XXVII: The Environment (iii). Sixth Schedule, Article 189.

[13] MEMD (2013) Biomass Energy Strategy (BEST) Uganda

Output Code	Planned Output
Equipment	Four hand Global Positioning Units (GPS) purchased Materials to support completion of 10kw Apac biogas unit purchased Four gasifier units for gasification technology demonstration purchased Plan for gasification technology implemented Engineering design (biogas system for electricity) completed
Output 030178 Purchase of Office and residential furniture and fittings	Office furniture purchased

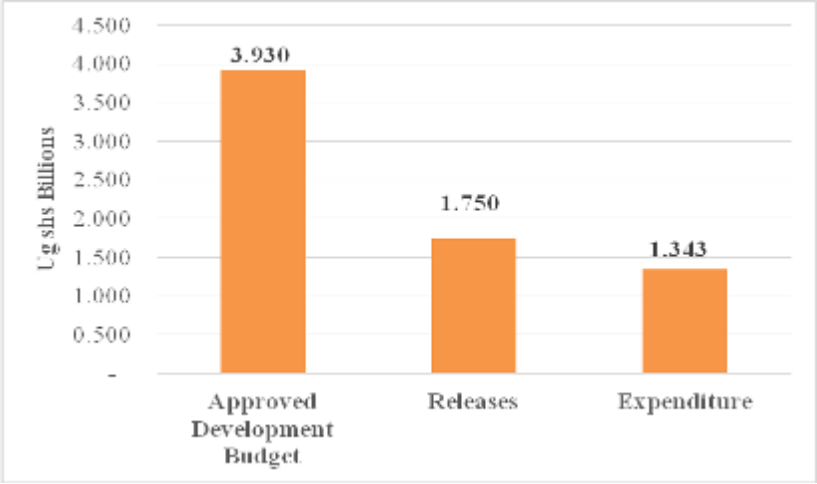
Source: MEMD (2014) Ministerial Policy Statement

Findings

i. Financial Performance

The approved GoU development budget for FY 2014/15 is Ug shs 3.930 billion of which 44.5% had been released by December 2014 and 79% expended. This indicated an excellent release and a very good expenditure performance. Figure 7.3 shows the Financial Performance of the project by December 2014.

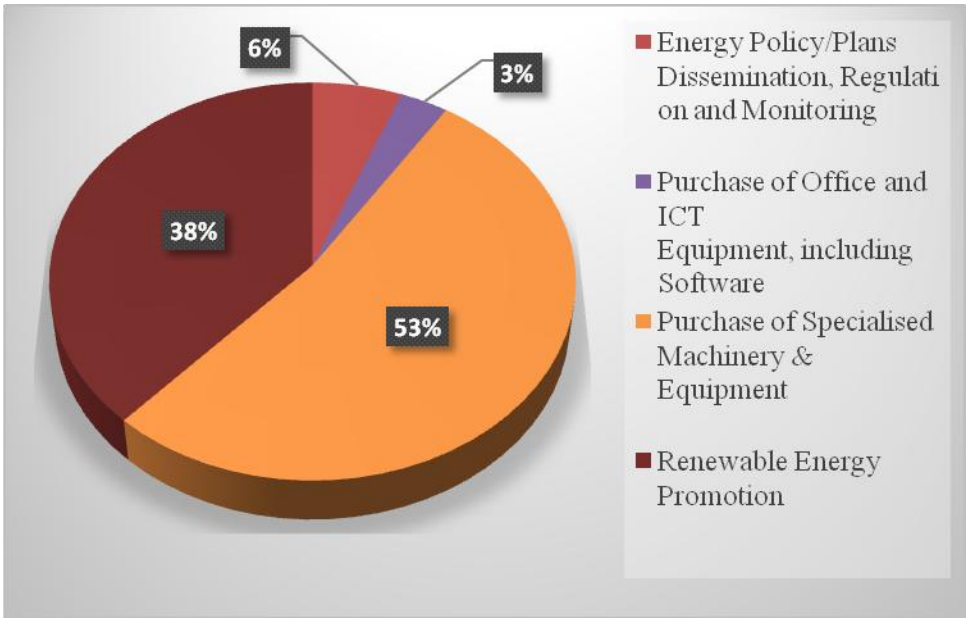
Figure 7.3: Financial Performance of the project by December 2014



Source: IFMS December 2014

The key expenditures by output for the project by December FY 2014/15 based on IFMS data are shown in Figure 7.4. Purchase of specialized machinery and Equipment took 53% of project expenditure. This was followed by the "Renewable Energy Promotion" output. This indicates a good allocative efficiency.

7.4: Proportion of expenditure by Output



Source: IFMS Data

Physical Performance

The project was under performing on over 70% of its targets. Table 7.6 provides a summary of project performance

Table 7.6 Physical Performance of the Project by 31st December 2014

Planned Output	Achievement
030101: Energy policy/Plans, dissemination, regulation and monitoring	
Biofuel standards developed	The MEMD held internal consultations on Biofuel standards. The overall status was at 10%
Biogas standards developed	Technical Working group for development of biogas standards on biogas lamps, biogas plants and codes of practice for biogas construction formed. The MEMD had regional consultations in Kenya as the country already has Biogas standards. The ministry was working with the Uganda National Bureau of Standards (UNBS) to develop the standards.
Biofuels regulations developed	The ministry held internal consultations in Jinja district with Parliamentary Council and UNBS in August 2014. The draft Bill was in place waiting to be assented to.
030103: Renewable Energy Promotion	
Biogas technology promoted	The MEMD monitored and promoted the Uganda Domestic Biogas

at household and institutional level	program implemented by Heifer International, funded by the Dutch government. Heifer International constructed 5300 digesters. Focus was in the districts of Mbarara, Bushenyi, Ntungamo, Masaka, Kampala, Wakiso, Mukono, Mpigi, Mbale and the Soroti region.
Establishment of bio latrine technology in institutions supported	Construction of bio latrines in 10 schools started in July 2014. It was supposed to be completed in two months. By the end of December 2014, the works in Kitagobwa Secondary School (the case study) were still ongoing.
Completion of 10kw biogas unit in Apac supported	The project implementer (Apac Anti-corruption Coalition) prepared the Bills of Quantities (BoQs) for the project and was awaiting approval from the MEMD accounting officer.
Large scale biogas technology for electricity generation promoted	Works had not started. Request to start the selection of sites and contractor for the biogas unit were pending approval by the Accounting Officer.
Household gasification stoves promoted	The MEMD in collaboration with stove testing centers like; Centre for Research on Energy and Energy Conservation (CREEC), and CIRCODU disseminated information.
Gasification for electricity generation promoted	Promotion of gasification for electricity generation has got two components Rehabilitation of Nyabyeya gasification Unit (150kW) Procurement of 4 Small Scale Units of 10kW each to install them in areas which are viable for electrification but are not on the grid The evaluation cable and a change over switch for Nyebyeya Gasification Unit were under procurement Procurement process for construction of the biogas systems for electricity was ongoing.
Small scale briquetting technology promoted	Briquetting technology has not yet been procured. The evaluation report had been submitted to the contracts committee
Large scale briquetting technology promoted	The request for the briquetting technology was submitted in September 2014 but was pending approval by the accounting officer.
030151: Membership to IAEA	
Obligations to International Renewable Energy Agency (IRENA) membership met	No funds were released.
030179: Purchase of Office and ICT equipment, including software	
Scanner purchased Laptop computers purchased Desk computers purchased	Procured office ICT Consumables

030177: Purchase of Specialized Machinery and Equipment	
Biogas unit for electricity generation purchased	Biogas unit was not purchased. The requisition was pending approval from the accounting officer.
Spares for Nyabyeya gasifier maintenance purchased	Electromechanical repairs on the 82.5kW unit were carried out. Report in place. Additional repairs on the two units of the 150kW Nyabyeya gasification system were also carried out. More test runs to be carried out.
Four hand Global Positioning Units (GPS) purchased	
Materials to support completion of 10kw Apac biogas unit purchased	Units had not yet been procured because specifications were still being developed.
Four gasifier units for gasification technology demonstration purchased	Materials have not been purchased. The BoQs are awaiting approval from Accounting Officer MEMD. The purchase of the gasifier unit was pending approval until the Nyabyeya gasification unit was functional.
Plan for gasification technology implemented Engineering design (biogas system for electricity)	Procurement process for construction of the biogas systems for electricity was ongoing. The scope of works for the contractor to construct the biogas system for electricity generation were developed and procurement process initiated
Output 030178 Purchase of Office and residential furniture and fittings	
Purchase of office furniture	No funds were released

Source: MEMD

Field findings

a) Construction of bio-latrines

The MEMD planned to construct demonstration bio latrine systems to generate bio gas for cooking partly to substitute firewood. This was to be implemented in 10 schools, as they are major consumers of fuel wood.

The criterion that was used included;

a. Interest of the school to access biogas,
b. Provision of a suitable site for demonstration by the school,
c. Adequate population of more than 500 pupils/ students in order to sustain biogas production from human waste,
d. Provision of supplementary feedstock to sustain biogas production and increase gas yield
e. Availability of water and in close proximity to the bio latrine demonstration system.

Case Study

Construction of Bio-latrine in Kitagobwa Secondary School

Kitagobwa Secondary School was one of the beneficiary institutions. The school is located in Kizana village, Ngando sub-county in Butambala district. It has got a population of 761 students. Construction of the bio-latrine started in September 2014 and by 11th February, 2015.

Construction works were ongoing, pending roofing, shutters and finishes. Works stopped in November 2014 due to lack of construction materials. This delayed project implementation.

Left: Component of the Bio latrine. Right: plastering works on the bio latrine at Kitagobwa SS, Ngando sub county, Butambala district

b) Support the completion of 10kw biogas unit in Apac district

Background

The Apac biogas unit is located near Kayee landing site, Akokoro sub county in Apac district. The Agency for promoting Sustainable Development Initiative started the project upon receipt of funding from the World Bank in June, 2012. A total of US$150,000 was provided to the Agency for the project upon submission of a proposal for the project. The equipment was procured in 2012. The construction work started in June 2012 and lasted about 8 months.

The project stalled in 2013 due to lack of funds and poor management. The MEMD identified the intervention and planned to support it during the FY2014/15. Currently the project is managed by the Agency for Sustainable Development Initiative; the Apac Anti-corruption Coalition and Apac NGO forum is responsible for the oversight role. The project is a Public Private partnership with the aforementioned actors, the District local government and MEMD. There was nothing ongoing for the period under review and the project had stalled as indicated in the pictures below.


Left: Procured equipment for the biogas System. Right: Digesters at Completion level abandoned due to inadequate funding

- Inadequate technical capacity. The implementers have partially solved the problem by sponsoring two engineers to train in Biomass technologies.
- The district and sub county had not made their contribution as agreed in the Public Private Partnership.
- Delay in disbursement of funds to the project
- Lack of funds to facilitate the coordinating members on the ground

Analysis

Link between financial and physical Performance

A total of Ug shs 1.75 billion (44.5% of Ug shs 3.9 billion) was released for the project and 79% of the released funds expended. However, there was no link between physical and financial performance. Physical performance for 81% of outputs was below average. Construction of Bio latrines was done but behind schedule. Support for the completion of the 10kw biogas unit in Apac district was not yet done as the request was still pending approval by the accounting officer.

Achievement of set targets

Physical performance for the project was not satisfactory as 81% of the project outputs were below average. Achievement of set targets was majorly delayed by the procurement process or requisition were pending approval by the accounting officer. Outputs that were affected by delayed procurement process were; “gasification for electricity generation promoted”, “small scale briquetting technology promoted”. Outputs that were pending approval by the accounting officer were; “Completion of 10kW biogas unit in Apac supported”, “Large scale biogas technology for electricity generation promoted”, “Large scale briquetting technology promoted”, “Biogas unit for electricity generation purchased”. Other requisitions like, “Four gasifier units

for gasification technology demonstration purchased" were pending the successful implementation of Nyabyeya gasification technology

Overall Challenges

1) Poor prioritization and therefore limited funding. The contribution of biomass to energy production has not been appreciated.
2) Prolonged procurement process in MEMD. A process supposed to take one month takes 3 months with no explanation.

Conclusion

The Modern Energy from Biomass for Rural Development performed below average by December 2014. Outputs for the project were not achieved majorly due to prolonged procurement process; delayed approval of requisitions by the MEMD Accounting Officer; and other gasification projects were put on hold pending the successful implementation of Nyabyeya Gasification technology. Generally, the contribution of biomass to energy production has not been appreciated. As a result, the Biomass project has not been prioritized.

Recommendations

- The ministry of Energy and mineral Development should support the Modern Energy from Biomass for Rural Development project to achieve its project outputs.
- The procurement unit of MEMD should expedite the procurement process

7.2.3 Project 1024: Bujagali Interconnection Project (BIP)/ Bujagali Switch yard Upgrade

Background

The African Development Bank, Government of Japan and GoU jointly finance the project. The executing agency is Uganda Electricity Transmission Company Limited (UETCL). The aim of the project is to evacuate power from the Bujagali Hydropower Plant to the national power grid.

Following the substantial completion of the Bujagali Interconnection project, there was a saving of approximately US$ 0.13 billion. These savings were recommended to be used for an identified additional scope within the project confines. The scope involves upgrade of the Bujagali Hydro Power Switchyard from 132kV to 220kV. The Engineering Procurement and Construction (EPC) contract was awarded to National Contracting Company. The project commenced in October 2013 and it is expected to end in February 2015[14]. This was not achieved and the contractor submitted to the consultant and client a request for an eight months extension.

The planned output for FY 2014/15 is; Bujagali Switchyard upgraded to 220kV.

Findings

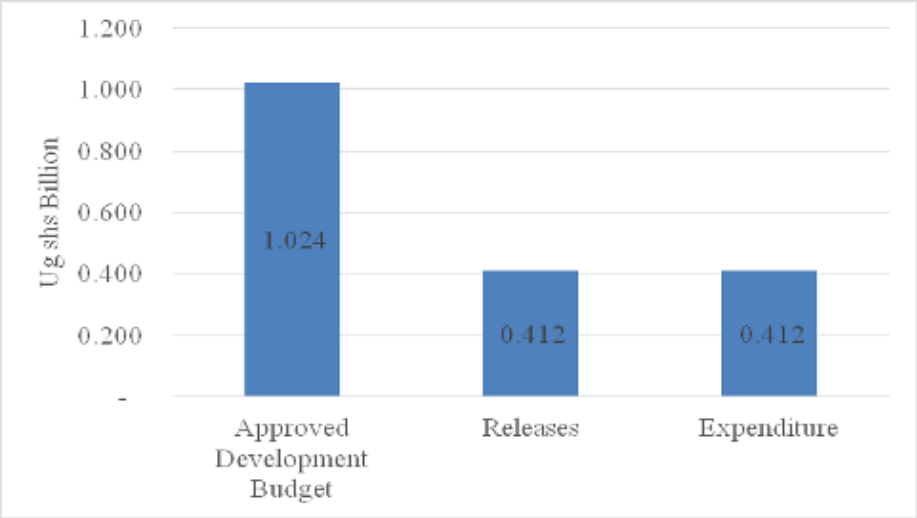
Financial performance

The GoU development budget in FY2014/15 for the Bujagali Interconnection project is Ug shs 1.024 billion of which 40% was released by the end of December, 2014. This was an excellent

[14] UETCL *Bujagali Interconnection Project-Bujagali Switchyard Upgrade to 220KV* (Kampala 2014)

half year release performance. The MEMD transferred all the released funds to UETCL for expending. The released funds were to be expended on the output of Thermal and Small Hydro Power Generation (UETCL). Figure 7.5 shows the financial performance of Project 1024 as at 31st December, 2014.

Figure 7.5: The GoU Financial Performance of the Project 1024



Source: IFMS

Payments to the National Contracting Company

The contract amount for the project is in three currencies as seen in Table.7.7. By the 10th, February 2015, the contractor had been paid US$4,088,142.80.

TABLE 7.7: FINANCIAL PERFORMANCE OF THE BUJAGALI UPGRADE PROJECT

Currency	Contract Amount	Payments
US$	6,821,293	4,088,142.80
EURO	1,251,169	0
Ug shs	345,075,361	0

Source: Project Consultant

Physical performance

The preliminary works were completed. Soil investigations, site office construction, surveys, setting out foundations had been completed. Civil works were 35% complete while the electromechanical had not commenced. All the major equipment had been delivered on site while the transformers were under shipment from India.

Overall physical progress was 35% against 90% of time progress. Project works were behind schedule. The subcontractor (Precise Engineering Services) for civil works did not have adequate financial and technical capacity (inadequate equipment and labour for deployment on site).

Table 7.8 below summarizes the physical performance of the Bujagali switch yard upgrade.

Table 7.8: Planned Output And Physical Performance For The Project By 9th February, 2015

Planned output	Observed Physical Performance
Bujagali Switchyard upgraded from 132kV to 220kV Site Survey and Substation Leveling.	The site survey and substation leveling was completed.
Excavation for Civil Works. Construction of foundations for the substation equipment	Excavations for the 7 towers and the second transformer had been completed. Constructions of the transformer foundations, tower foundations and other equipment were ongoing. The first transformer foundation was substantially complete. The pending components were; a retaining wall and cable box support. Plain Concrete Cement works (PCC) had been completed for one of the 220kV tower while the second one was ready for casting. The three towers were to be set for casting during February 2015. Preparations for concrete works including steel fixing and shuttering were ongoing. Casting of the two towers for the 132kV was to be completed in February 2015.
Earth mat laying	Earth mat laying had not commenced awaiting completion of tower foundations.
Electromechanical installations Transformer installations Erection of tower structures 5X220kV 2X132kV Pre-commissioning Switch yard commissioned	Works had not commenced awaiting completion of the civil works. The Overall completion for the project was 35% against 90% of time progress.

Source: Field Findings

Challenges

- Lack of proper access road to the site. The available road was in a poor condition and the client was slow to rehabilitate it. The client instead proposes the contractor to rehabilitate it and yet it was not in the contract.
- Late procurement of the supervising consultant. The UETCL contracted the consultant in December,2013 three months after the contract for works. This affected approval of the drawings.
- The client requested for changes in the designs and type of equipment to install in the project after signing of the contract. The back and forth discussions between the contractor and UETCL delayed project implementation.
- Some of the coordinates provided were along the sewer line, which was cut during the excavations. The contractor was required to repair the sewer line at a cost of US$8000 which was not provided for in the contract.
- The slow response from the client (UETCL) to the requests by the contractor and consultant. The contractor for instance requested the client to have one tower de-energized from those existing and an alternative created to enable smooth implementation of the project and this had not been done. The consultant provided options in November,2014 but implementation had not yet been done by 10th Febraury,2015.
- Rainy seasons in November and December,2014 affected the progress of civil works

Analysis

Link between financial and physical performance

By the 9th, February, 2015, US$4,088,142.80(60% from the dollar account) had so far been paid to the contractor against 35% physical progress. The link was weak, as some equipment had not yet been delivered for installation.

Achievement of targets

Project performance was below average. Civil works construction was at 35% completed against 90% of time progress. The project was affected by limited financial and technical capacity of the sub-contractor, lack of proper access road, and delayed procurement of a supervision consultant.

Conclusion

The contractor had achieved 35% progress. However, the project was eight months behind schedule. Civil works were ongoing at a slow pace due to the inadequate capacity of the subcontractor. The contractors and consultant have experienced slow responses to their requests from the client.

Recommendations

- The MEMD should convene a meeting between UETCL and UEGCL to resolve issues of access road to the Bujagali switch yard.

- The UETCL planning unit should ensure that completed detailed designs with definite type of equipment to use before bidding and award of contracts to avoid delays due to continuous changes.
- The UETCL should urgently manage contractors and consultants concerns.

7.2.4 Project 1025: Karuma Interconnection Project (KIP)

Background

The GoU has prioritized the construction of the interconnection line in order to evacuate power from Karuma Hydro Power Plant (HPP) to the national grid. The objective of the interconnection line is to provide adequate transmission capacity for evacuation of electric power from the Karuma Hydropower station.

The Public Investment Plan (2014/15-2016/17) indicates that the project started in July 2008 and expected to be completed by June 2015. The date will however be revised after finalization of the financing agreement between GoU and the EXIM bank. Project cost is Ug Shs 191.5 billion[15].

The transmission line traverses the districts of Oyam, Lira and Kole for the Karuma – Lira section; Nwoya for the Karuma- Olwiyo section; and Kiryandongo, Masindi, Nakasongola, Luwero and Wakiso for the Karuma-Kawanda section.

Expected outputs by 2015 include;

1. Karuma- Kawanda 400kV (approximately 265Km), 132kV line Karuma- Lira (approximately 80Km), Karuma- Olwiyo 132kV (60Km) transmission lines constructed.
2. Associated substations at Kawanda and Olwiyo constructed.

In FY 2014/15 UETCL/MEMD Planned outputs were;

i. Karuma- Kawanda, Karuma- Lira, and Karuma - Olwiyo transmission lines and associated substations constructed.
ii. RAP for Karuma- Kawanda, Karuma- Lira, and Karuma – Olwiyo transmission lines and associated substations implemented.

The RAP implementation and supervision works are funded by GoU, while the China`s EXIM Bank funds the EPC works (output i).

Findings

Financial performance

The GoU approved development budget for the Karuma Interconnection project for FY2014/15 is Ug shs 4 million of which 50% was released to MEMD. The ministry transferred all the released funds to UETCL- the project implementers. The released funds were to be spent on the output of acquisition of other capital assets on the specific line item of monitoring, supervision and appraisal of other capital works.

15

The EPC works

The contract was awarded to Sino Hydro at a sum of US$ 289,905,220.29. By the end of December 2014, the contractor had received US$ 43,485,783.04 (15% of the contract sum) as advance payment.

Physical performance

The RAP implementation was the major activity ongoing on Karuma- Kawanda and Karuma-Lira sections. The Karuma- Olwiyo section was still on halt because of the proposal to increase the voltage capacity of the planned transmission line from 132kV to 400kV. The increment in voltage requires an increase in the required corridor from 30 meters to 60 meters.

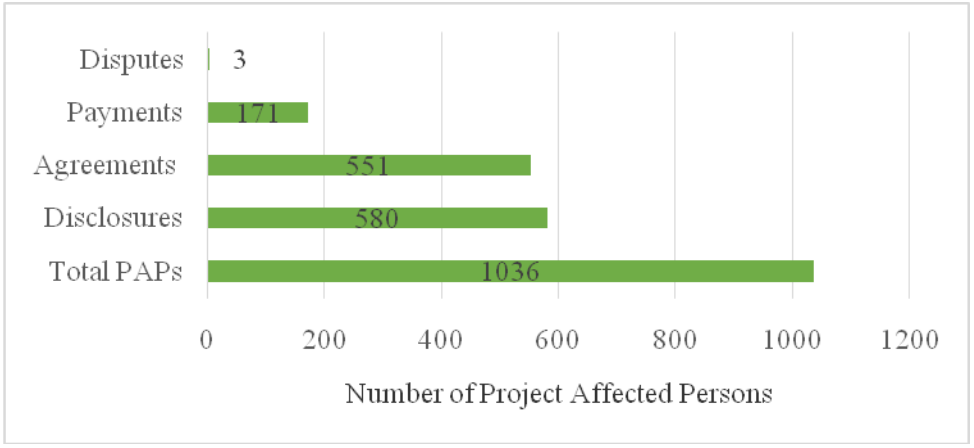
There are 3,784 Project Affected Persons (PAPs) on the Karuma- Interconnection project. By the end of December, 2014, disclosure had been made to 2,186 (58%) of the PAPs. Of the 58%, 2,096 (96%) PAPs had accepted the package. A total of 615 (29%) of the PAPs that agreed had been paid.

The RAP implementation on the Karuma- Lira section was the focus during the half year. There are 1036 PAPs on the Karuma- Lira section of which 56% were disclosed to (see Figure 7.6). Of the 56%, a total of 95% agreed to the disclosed compensation packages.

Compensations commenced in July 2014. A total of 171 (31%) PAPs of the 1036 had been paid by 31st December, 2014. A total of 95 PAPs were submitted by the consultant for payment. However, there were issues of missing information concerning the acreage of the affected land, and the value of the land. The consultant was to provide such information before the PAPs could be compensated. In January, 2015 another batch of payments was ready for payments.

The RAP implementation was slow and this was attributed to the large number of PAPS (223) in Lira who had not yet been disclosed to.

Figure 7.6: RAP implementation for Karuma- Lira section



Source: UETCL; Field Findings

Construction of resettlement houses for the Physically Displaced Persons (PDPs) had not started. The process to ascertain the total number of PDPs was still ongoing.

Box 7.3: Interviews conducted with PAPs

Interviews were conducted with the selected PAPs from the sub counties of: Aboke in Kole district; Loro, Aber, and Kamdin in Oyam district.

The PAPs noted that valuations were made in 2010 while the compensations commenced in July 2014. The community, group and personal disclosures were made between 2010 and 2014. Some PAPs acknowledged receipt of the compensation packages while others were still awaiting the payments. Those that had not been paid noted that the payments delay yet the land to purchase keeps appreciating on the market. Some of those that were paid complained that that the payment was inadequate while others were happy. Those that were contented were to use the money to purchase land elsewhere.

The PDPs who were promised houses wondered when their packages would be considered. The PAPs who disputed the valuation noted unfairness and exclusion of some affected property. A discussion with two selected PAPS is presented below.

PAP One

Mr. Awot John Charles, a PAP in Loro sub county Aboloheno A village asserted that his permanent house (Four roomed, Bricks and Iron roofed) had been valued at Ug shs 1,000,000 which he rejected. His entire property including permanent house, trees, and farm for oranges, among others was valued at Ug shs 12,000,000. Some of his property, like the wire fence, latrines had not been included. He noted that his worth is Ug shs 196,000,000 and he had written to UETCL on 22nd July 2014 complaining about the low valuations.

PAP Two

The 87-year-old Yonacan Atim from Aboke sub county, Te-okole village received his Ug shs 2,800,000 compensation cheque written on 14th August 2014 with an expiry of six months. The cheque was dishonored due to discrepancies between the bank account names and the names on the cheque. By 15th January 2015, the old man was still stranded. ''*I have no one to consult. I lost the phone number of the UETCL officials*''. *The UETCL officials have never come back to me otherwise I would have told them. I do not know Kampala like other people.* Yonacan was nonetheless happy with the compensation package for his trees and crops except for the failure to receive his money from the bank.

The challenges highlighted by the PAPs included;

- Discrepancies in the bank account names and the names in which the PAPs cheques are written.
- Under valuation of the affected property.
- Delay in compensations for PAPs who consented to the packages.
- Inaccurate recording of the affected property. Some property was not included in the valuations.

Overall implementation challenges

- The UETCL`s failure to procure a RAP implementation consultant to deal with disputed valuations.
- Disputes arising from low compensation packages.
- Rejection of compensation packages by PAPs in the same geographical area affected by two UETCL projects as a result of issuance of different valuation rates.

Analysis

Link between Physical and Financial performance

By the end of December 2014, US$ 43,485,783.04 was released to the contractor and was spending the funds on pre-construction activities of the transmission line while compensations were at 29%. This represents a weak link as there was no construction work on ground and RAP implementation was slow.

Achievement of targets

Karuma Interconnection project performance during the half year was below average(less than 50%). Compensations were at 29% of the PAPs. This was due to disputes over low compensation packages. The RAP implementation had not commenced for the Karuma – Olwiyo section. The EPC contractor had only started pre-construction works on the transmission works.

Conclusion

Project implementation of the Karuma Interconnection project is behind schedule. Compensations was slow as it had not commenced for one of the sections. Progress was however noted on the Karuma- Kawanda section and the Karuma – Lira where a total of 615 PAPs had been paid by the end of December 2014. The construction works had not commenced.

Recommendations

The UETCL procurement unit should fast track procurements of RAP implementation consultants.

7.2.5 Project 1137: Mbarara – Nkenda/Tororo –Lira Transmission Lines

Background

The Government of Uganda (GoU) received funding from African Development Bank (AfDB) towards the implementation of Mbarara-Nkenda and Tororo-Lira Transmission Lines Project. The project is aimed at expanding and strengthening the national transmission grid. This project will boost economic growth in western and eastern Uganda.

The general objective of component is to provide a high voltage backbone between Mbarara and the mid Western towns. The objective of component two is to replace the wooden poles that are prone to fires and other natural hazards steel tower structures

Planned outputs for the project include

- Acquisition of Right Of Way (ROW) through compensation and resettlement of Project Affected Persons (PAPs)
- Procurement of contractors for works
- Construction of Mbarara-Nkenda 132kV (160km) and Tororo-Opuyo-Lira 132kV (260km) transmission line.

Planned outputs for FY 2014/15 include; construction of Mbarara- Nkenda and Tororo-Lira transmission lines, construction of associated substations. Total planned expenditure for the project is Ug shs 81.2 billion. The source of funding is African Development Bank (ADB).

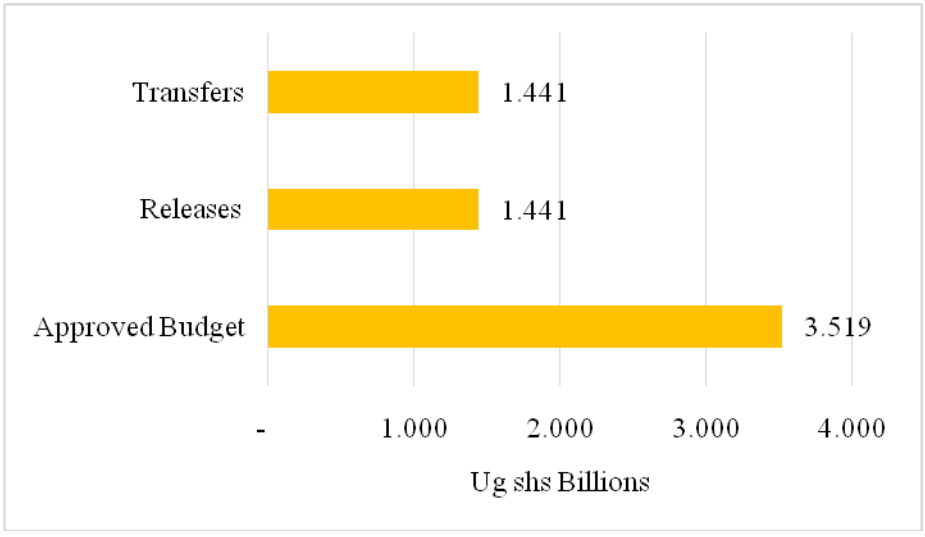
The contractor for the project is Kalpataru Power Transmission Limited. Hifab and Sunshine Projects Limited supervise the project works. Subcontractors on the project include; Control Tech Power Limited, charged with erection of the towers and stringing; and Techno Electric and Engineering Company Limited charged with construction of the substations.

Findings

Financial Performance

The GoU approved development budget for FY2014/15 for the project is Ug shs 3.519 billion of which 41% was released. All the released funds were transferred from MEMD to UETCL the project implementers. The transferred funds were to be spent on line item of Monitoring, Supervision, and Appraisal of Capital Works. Figure 7.7 shows the financial performance of project 1137

Figure7.7: Financial Performance of Project: 1137



SOURCE: IFMS DATA

Donor funding

The loan amount for the project is UA 52,510,000 of which 57% had been disbursed by end of December 2014. The summary of loan disbursements are presented in table 7.9

Table 7.9 Loan disbursements from ADF to December, 2014

Disbursement	ADF(UA)	Exchange rate	ADF (Ug shs)
Loan Amount	52,510,000	3,919.93	205,835,524,300
Disbursement to Date	29,797,197	3,919.93	116,802,926,436
Un Disbursed Balance	22,712,803	3,919.93	89,032,597,864
% of Loan Disbursed	57%		57%

SOURCE: UETCL

The RAP implementation

The total budget for RAP implementation is Ug shs 63.618 billion. A total of which Ug shs 1.441 billion was released by end of December, 2014. Cumulatively 84% of the budget had been released by the end of December, 2014. By the end of December, 2014; a total of Ug shs 37.745 billion had been paid to the PAPs and a total of Ug shs 15.536 billion was still outstanding on the account. Preparations were under way to pay the outstanding PAPs. Table 7.10 shows the RAP implementation for the Mbarara-Nkenda/Tororo-Lira-Opuyo transmission line.

Table.7.10: RAP Implementation

	Disbursement	Ug shs	%age
(i)	RAP Budget	63,617,611,030	
(ii)	Cumulative Releases	53,281,606,800	84 of budget
(iii)	Un Disbursed Balance	10,336,004,230	
(iv)	Bank Bal. 31st DEC 2014	15,536,415,749	

Source: UETCL

Physical Performance

Monitoring of the Mbarara-Nkenda/ Tororo-Lira-Opuyo line majorly focused on the EPC works. Overall, works were behind schedule. Table 7.11 shows the progress of EPC works for the Mbarara-Nkenda/ Tororo-Lira-Opuyo transmission line.

Table 7.11: The EPC works on Mbarara-Nkenda/Tororo-Lira-Opuyo Line

Lot 1: Construction of 264 km 132kV Tororo- Opuyo- Lira transmission infrastructure
The transmission line traverses 10 districts of Tororo, Mbale, Palisa, Bukedea, Kumi, Ngora, Soroti, Kaberamaido, Dokolo, and Lira. The contract start date was 26th February 2013 and expected completion date was August 2014. There was an extension for additional works for six months which ended in January 2015. The contractor has requested for an additional 14 months extension due to ROW issues. Summary of progress for the project: Survey- 227km out of 264.4 km Foundation- 530 out of 716 (75%) Erection of towers- 461 out of 716 (65%) Stringing- 1.1km out of 264.4 km (0.4%) A total of 90% of materials have been procured. The percentage on stringing should have increased. However, for the activity to be carried out, the entire section should have been handed over to the contractor. The ROW issues have delayed stringing. Some PAPs were not allowing the contractors to use their land before compensation. For instance, in Ojeli, there is a school and trading centre where the community refused contractor to construct the transmission line. A total of 80% of the pending foundation and tower erection works is due to ROW issues. The main reason for resistance on the side of the PAPs is low compensation packages from the UETCL. The UETCL sent a RAP consultant who did valuations between October and November 2014. The company is awaiting the report from the CGV. Substations A total of 80% of the equipment have been delivered for all the substations Tororo Substation Works on the substation are at initial stages. Initially, the work was for single circuit. This was revised to double circuit and therefore the need to install equipment for a second circuit. Additional works were approved on the part of the contractor but the consultancy work was not approved. The contract for the consultant for additional work was signed in December 2014. Opuyo Substation Preparatory works are ongoing on site. There were land acquisition issues. A section of land towards Lira was acquired and handed over to the contractor. This had been fenced off. The section towards Tororo is yet to be acquired. The land owner says the money given to him was little. This affected works as the contractor wanted to mobilize for the works on the substation at the same time Implementation Challenges for Tororo-Lira-Opuyo transmission line The ROW issues continue to delay implementation of projects. Delays in clearance of materials from URA customs. Some times UETCL takes long to pay tax for the materials. This increases the cost of storage on the side of the contractor. Originally, once materials arrived, the contractor would clear them and ask for a refund. Delay in the payments to the contractor. The contractor had submitted payment claims 4-5 months and this have not been honored. Unexpected hard rock encountered during excavations consumes more time and effort The contractor and consultant recommended that; The Project implementation Unit of the UETCL should streamline compensation issues. It is a big problem in most projects that use the ROW

MFPED should provide funding for tax clearance for the projects imported materials to avoid delays in implementation
Lot 2: Construction of 160 km132kV double circuit Mbarara-Nkenda transmission line
Foundation works and tower & monopole erection were on-going. The progress of the works are detailed below; Detailed Survey- 157.4km out of 158.2km expected route Total Route approved – 152.943 km out of 158.2 km expected route (97%) Total Dynamic Cone Penetration Test (DCPT) completed - 421 out of 453 locations (93.1%) Total Tower foundation Completed – 138 out of 317 tower locations Total Tower Erection Completed – 121 out of 317 towers Monopole foundation completed – 113 out of 136 locations Monopoles erected – 93 out of 136 locations
Associated Substations
Fort Portal Substation Project commencement date was December 2013. Actual start date for works was February 2014. Expected completion date was December 2014. A time extension was granted by UETCL due to their delay in approval of the substation drawing. The scope of work included; Civil and Electro mechanical works. The progress of civil works is detailed below; Control room building 60% Equipment Foundation 100% Transformer foundation 100% complete Guard house 50% DG building 20% Fencing works is not yet started Overall civil works complete are 80% Electrical works were ongoing but at initial stages. Equipment erection had commenced and was at 85%. Overall, electro mechanical works were at 25% completion. Overall the project was at 75 progress Old Mbarara North Substation The contract was signed in December 2013. The actual start date for the project was March 2014 and expected completion date was December 2014. The contractor hopes to complete the project in may 2015. The progress of works includes; Equipment foundation tower- 100% Cable change- 100% Equipment Structure Erection- 90% Electrical works- 20% Overall works were at 90%. All materials were in place. Nkenda substation Civil works commenced in July 2014 and were expected to be complete in September 2014. However, there were challenges with excavation of hard rock. Unexpected old concrete was also encountered during excavations. This delayed the project. The progress of work included;

Construction of Switchyard foundation- 100% Construction of Cable trench- 90% Drainage- 60% In terms of electro mechanical works, erection of equipment was at 60% Implementation Challenges for the substation included; The substations were majorly delayed by late approval of designs by the consultant Delays in completion of the transmission line therefore testing of the substation could not be done. Recommendations Need for the consultant to approve the designs immediately

Source: Field Findings

Left: Excavation of special foundation in Bungokho Sub county, Mbale district on the Tororo-Opuyo line. This was due to the soft nature of the soil. This also delayed project implementation Right: Stringing works in Atutur sub county, Kumi district

Fenced off section of the Opuyo Substation, Soroti district


Left: Control room building Right: Ongoing electrical works at Fort Portal Substation; Kabarole District


Left-Right: Equipment structure Erection work on the Old Mbarara North substation


Left to right: Ongoing excavation works; erected pylon on the Mbarara-Nkenda transmission line

Analysis

Link between Physical and financial performance

A total of Ug shs 37.745 billion had cumulatively been paid to the PAPs. However, by December 2014, the right of way had not yet been fully handed over to the contractor. The RAP implementation was slowed down by disputes majorly over low valuation. The loan disbursement for the construction works of the transmission line and substation works was Ug shs116.803 billion. Overall EPC works were below average. Delayed; acquisition of the right of way, payment of the consultant, and approval of drawings were the major challenge that slowed project implementation.

Achievement of targets

Achievement of targets for the Mbarara-Nkenda/Tororo-Opuyo-Lira transmission line for FY 2014/15 was below average. The right of way was not yet fully handed over to the contractor for construction to progress. Delayed payment of the supervision consultant slowed down project implementation. Contractors were also constrained by delayed payments and the rocky nature of the route length. Low level of achievement was also noted on the works for the substation especially on the Tororo-Opuyo substation.

Conclusion

Progress on the Mbarara-Nkenda/ Tororo-Opuyo-Lira section was at a slow pace. Acquisition of the Right of way still causes a major delay to project implementation. The major issues that were delaying the RAP implementation were; disputes over low valuation of property and delays in approval of compensation packages at the CGV's office. The substations component on the Tororo-Opuyo section was also very slow. The major challenge that is affecting progress of works on the Tororo substation was failure to acquire part of the land for the substation.

Recommendations

- The supervision consultant and the UETCL should approve the designs immediately
- The UETCL should hand over the Right of Way to the contractor to expedite project implementation
- District Land Boards should update the land value in their districts to enable consultant use the most up to date compensation values

7.2.6 Project 1222: Electrification of Industrial Parks

Background

The GOU established Industrial Parks in an effort to support industrial development in the country. The project was initiated to provide reliable power supply to industrial parks. This project supports development of; transmission lines to improve power service delivery and industrial zones. The key objective of the project is to provide adequate transmission capacity to cater for the projected demand from within the Industrial areas.

Some of the factories and industries to be served by the project include; Roofings Limited in Kampala Industrial and Business Park, Tian Tiang in Mukono district, Quality Chemicals in Luzira, and Tembo Steel in Iganga district.

The EPC contract was signed with M/s China Machine Engineering Company at a contract sum of US$ 100 million. The contract started on 30th, August 2013 with a tentative completion date of August 2016. The contractor was also to take part in the negotiation and finalization of the financing agreement between China EXIM bank and GoU.

Expected outputs by 2016

- Construction of Luzira Industrial Park 132/33kV Substation and Transmission Line Project (31km)
- Construction of Mukono Industrial Park 132/33kV Substation and Transmission Line Project (5km)
- Construction of Iganga Industrial Park 132/33kV Substation and Transmission Line Projects (12km)
- Construction of Namanve Industrial Park 132/33kV Substation and Transmission Line Project (10km)

Planned outputs for FY2014/15

i. RAP Implementation
   - (80%) of Right Of Way(ROW) acquired for the transmission lines
   - 10% of ROW acquired for the substation land

ii. Construction of Namanve South, Luzira, Mukono and Iganga Industrial Park Substations and associated transmission lines

Findings

Financial performance

Table 7.12 shows the financial performance of Project 1222 as at 31st December, 2014. The approved development budget for the project in FY2014/15 is Ug shs 1.040 billion of which 50% was released to MEMD. All the received funds were transferred to UETCL who are the implementers of the project. The UETCL was to spend 62% of the released funds on the output of acquisition of land for government while 38% was to be spent on output of acquisition of other capital assets.

Table 7.12: Financial Performance of Project 1222 as at 31st, December, 2014(Ug shs)

Approved GoU Development Budget (Billions)	Releases to MEMD (Billions)	Transfers to UETCL(Billions)	Release Performance Percentage	Transfer Performance Percentage
1.040	**0.520**	**0.520**	**50**	**100**

Source: IFMS Data

Physical performance

By 31st December 2014, construction works had not commenced as financing agreement had not been concluded. This has implications on the contract effectiveness. The conclusion of the

financing agreement was under way. The works that were ongoing were relating to RAP implementation. The summary of performance by industrial park is presented below.

Luzira Industrial Park

Uganda Investment Authority (UIA) provided the land for the construction of the substation. The land had been fenced off by the end of 31st, December 2014. The RAP study for the transmission line, which started in 2013, was still ongoing. The key set back was the veterans who occupy 20% of the corridor in Bukasa, which is required for the transmission line. The veterans require compensation yet they do not have proper documentation as the land belongs to government.

Kampala Industrial and Business Park (Namanve)

The UIA provided the land for the construction of the substation. The land had been fenced off by the end of 31st, December 2014. The RAP report for the transmission line had been with the Chief Government Valuer's (CGV) office for about one and half years (Since July, 2013) without approvals. This was in part attributed to the fact that some funds had been approved for RAP implementation for the area, which UMEME used to extend the power line to roofing limited. This according to the CGV would amount to double payment. The UETCL also noted that the corridor could not be used by UETCL as it had been poorly used by UMEME. The UMEME had not constructed the line in a straight format yet high voltage power by UETCL could not be constructed in a similar way.

Iganga Industrial Park

By the end of 31st, December, 2014, the RAP implementation had not commenced. The RAP report for the substation area and transmission line was approved by the CGV. The disclosures to the PAPs were expected to be completed in the third quarter upon which payments would be made. Progress of implementation was estimated at 10%.

Mukono /Mbalala Industrial park

The park is located in Mukono district near Tian Tiang Company. By the end of December, 2014, NFA consented to the use of the land, which UETCL identified. By the 31st, December 2014, UETCL had not yet fenced off the land for the substation. This was because its final location could not be determined before the final line route conclusion. The SCOUL Sugar factory declined UETCL to use some of their land upon compensation for the line route construction. An alternative line route had been identified and RAP studies had commenced. Some components of the studies include sensitization of the locals and demarcation of the required land for the transmission line.

Challenges

- Delay in the finalization of the financing agreement between the China Exim bank and Government of Uganda is delaying the EPC works
- Delays in the approval of the RAP report by the Chief Government Valuer (CGV).
- Disputes of the values disclosed by UETCL that are perceived low by the PAPs.

Analysis

Link between physical and financial performance

By 31st December, 2014 Ug shs 0.520 billion was transferred to UETCL for expenditure. Compensations of the project-affected persons had not commenced in all the industrial parks. The only expenditure incurred were relating to line route surveys and disclosures in parks like Iganga. The land for the substation in the Luzira and Namanve were given by UIA and did not require purchase. There was therefore a poor link.

Achievement of targets

Project performance was below average. Apart from the land that UIA allocated to UETCL for substation construction, no land had been acquired for the project. The EPC works were far from commencing due to absence of land for the construction and non-finalization of the financing agreement between GoU and China EXIM bank.

Conclusion

The electrification of the industrial parks project implementation is off target. This was affected by delayed commencement of the RAP implementation. Owners of big pieces of land like Mehta and the veterans are not willing to surrender their land for project implementation. In addition, delay in the conclusion of the financing agreement as made it impossible for EPC woks to commence.

Recommendations

- Ministry of Lands and Urban Development should revise the land law and policy as a lasting solution to the ROW issues. This must be cautiously executed to ensure a win - win situation between GoU and Project Affected Person while not paralyzing implementation of projects.
- The Directorate of Economic Affairs of MFPED should fast track the finalization of the financing agreement between GoU and China EXIM bank.

Vote Function 0302: Large Hydro power Infrastructure

The vote function supports development of large hydropower generation facilities in the country. The fund facilitates meeting government's endeavors to developing large power projects on a public/ private partnership in the medium term. The vote function of large power infrastructure took up the largest share (84%) of the development budget. This is largely attributed to the Government's priority funding to Karuma HPP which took up the largest share (83.68%) of the energy sector budget.

7.2.7 Project: 1143: Isimba Hydroelectricity Power Project

Introduction

Isimba Hydropower Project is one of the hydropower projects earmarked under the National Development Plan for development by the Government. The purpose of this project is to: increase on the power generation capacity and supply the local and regional market. The project is being developed under a bilateral arrangement with the Government of the Republic of China.

The EPC contractor for the HPP and the Isimba-Bujagali interconnection line is China International Waters and Electric Corporation (CWE). The contract was signed in September 2013 and the groundbreaking ceremony was held on 5th October, 2013. The contract sum for the project is US$ 567 million for a period of 40 months.

Expected outputs by 2016 are:

- Constructed 183MW Isimba Hydro power plant
- Constructed 4X45.8MW Isimba Hydro power plant
- Constructed 132kV Isimba-Bujagali , double circuit steel tower power transmission line (approximately 41km)

Annual planned outputs for FY2014/15

a) The RAP implementation for the Isimba HPP and the associated transmission lines finalized.
b) The Community Development Action Plan for Isimba HPP and the associated transmission lines completed and its implementation commenced
c) The Access Road from Kayunga Town to site and those within the project site completed.
d) The Employer and Contractor's Camp along with water supply system, power supply system, telecommunication line construction completed.
e) The project detailed designs incorporating the results of the additional investigations carried out by the contractor finalized.
f) The construction works for the power plant and the transmission line (30% coverage) commenced.
g) The construction of the site laboratory completed.
h) EPC works for Isimba HPP supervised

Findings

Financial performance

In FY2014/15, the approved GoU development budget as seen in figure 7.8 below for Isimba HPP is Ug shs 0.900 billion of which 100% of the budget was released. This was an excellent release performance. By 31st December, 2014, a total of 55% of the released funds were expended. This was excellent as it represents more than 100% for half year absorption by the project. The released funds were all spent on acquisition of land by government. The MEMD uses GoU funds for implementation of the RAP.

Fig 7.8: Financial performance for the Project 1143

Source: IFMS Data

The China EXIM bank financing

The contract sum for the project is US$567 million. The financing agreement between GoU and China EXIM bank was signed in November 2014. The loan disbursements had however not yet been made as the contractor had not fulfilled the conditions such as repayment terms, and power purchase agreements among others. By 31st December, GoU had disbursed US$ 85.05million (15% of contract sum) as advance payment to the contractor.

Physical performance

Table 7.13 indicates the physical performance of the Isimba Hydropower Plant by December 2014. Overall progress of the project is fair.

Table 7.13: Physical Performance of Isimba HPP

Planned output	Observed physical performance of the project
The RAP implementation for the Isimba HPP and the associated transmission lines finalized.	By the end of December, 2014 RAP implementation was ongoing. Compensations commenced in August, 2014 with an expected completion of June, 2015. A total of 3460 PAPs are to be relocated. The status of RAP implementation was as follows; the dam site was at 90% while the reservoir area was at 64%. The ROW acquisition for the transmission line was at initial stages as disclosures to the PAPs had commenced. The delay in compensation was because the CGV approved the RAP report in October 2014 upon which the compensations started. The compensations were to be completed by the end of the second half of the FY for both the disputed PAPs and those who were receiving the disclosures. Overall completion for the RAP implementation was at 52%.

Planned output	Observed physical performance of the project
The Community Development Action Plan for Isimba HPP and the associated transmission lines finalized implementation commenced.	A consultant was procured and was working with the local authorities on the items to include in the community development plan. The activity was expected to be completed by the end of March, 2014. Upon completion MEMD is to initiate procurement for the consultant to implement the plan.
The Access Road from Kayunga Town to site and those within the project site completed	The access roads in the project site had been completed while the road upgrade from Kayunga town had not yet been completed due to some RAP issues. Some landowners did not allow contractor to use the land. MEMD was handling the RAP issue.
The Employer and Contractor's Camp along with water supply system, power supply system, telecommunication line construction completed.	By end of December 2014; the contractor's camp was completed while the employer's camp was substantially complete. The key pending works furnishing of the offices and accommodation facilities. Water supply unit was also constructed and was at 70% progress while the communications facilities had also been installed in the camp. The power supply was almost complete. Pole erections and stringing for the HV network were complete while LV network extensions were ongoing to serve the different facilities in the camp. Diesel generators had also been set up to serve as power source for the equipment.
The project detailed designs incorporating the results of the additional investigations carried out by the contractor finalized.	By end of December, 2014; the detailed designs were approved
The construction works for the power plant and the transmission line (30% coverage) commenced.	By 9th, February 2014, construction of the first diversion channel had been completed while construction of the cofferdams was ongoing. Other works had not commenced. Physical progress was estimated at 5%.
The construction of the Site Laboratory completed.	This was completed and was under use for testing materials.
The EPC works for Isimba HPP supervised	The MEMD monitors and supervises the construction works at the site. Monthly progress meetings were held and continue to take place. The supervising consultant – Energy Infratech PVT LTD also supervises construction works on a daily basis

Source: MEMD, Field Findings

Left: Consultant and client's camp 95% complete Right: Initial excavation works on the cofferdam as at 9th February, 2015

Analysis

Link between Financial and Physical Performance

By end December 2015, the project registered 55% excellent absorption capacity for the half year. Performance of the RAP implementation was at 52% compensation rate for the PAPs. The EPC works registered 15% disbursement. On the other hand, physical performance for the works was at 5% representing a weak link between physical and financial performance.

Achievement of targets

Project performance during the half year FY2014/15 was fair. Absorption rates were 55% of the released funds. RAP implementation was also slow at 52%. The main construction works had just commenced with construction of diversion channels. Some works however progressed well with completion of contractors' camp and employer's camp, which was at finishes level.

Conclusion

Project implementation was fair. Purchase of some equipment had been done; the first diversion channel was completed while construction of the cofferdam was ongoing. Progress on other planned outputs was good; the labour camps were over 95% complete. Water supply and electricity supplies processes also progressed well. The magazine house was complete and was in use. The access roads were also under construction. The project was majorly slowed down by delays by the CGV to approve the RAP report and some cases of theft of the equipment.

Recommendation

- The MEMD should fast track completion of the compensations to avoid delays in construction.
- The contractor should step up security to reduce on incidents of theft of the equipment.

7.2.8 Project 1183: Karuma Hydroelectricity Power Project

Background

The GoU set out to develop Karuma HPP as a public investment of 600MW. The Government tendered the procurement of a consultant to carry out the feasibility study, Environmental Impact Assessments, Resettlement Action Plan, Engineering Design, preparation for tender documents and construction supervision. The tender was won by M/s Energy Infratech Private Limited (EIPL), of New Delhi, India.

The medium term objective of the project is the ultimate development of Karuma Hydropower Plant and its associated transmission line interconnection. The Hydropower plant will contribute to increasing the power supply in the country, and possibly in the East African region.

Increasing power generation capacity through development of large hydropower plants and building new transmission lines to evacuate power from new generation plants and improving power service delivery to different areas of the country, are key areas of focus in the National Development Plan (NDP).

The project was scheduled to start in July 2011 and expected completion date was June 2016. The EPC contract was awarded to M/s Sino hydro Corporation Limited on 16th August 2013 at a contract sum of US$ 1.398 billion. The preliminary works commenced on 16th September 2013 with an expected completion of 2018.

Expected outputs by June, 2018

i) Constructed 600 MW Karuma Hydro power plant- 6turbinesX100MW
ii) Constructed 220kV Karuma- Kawanda, double circuit steel tower power transmission line

In FY2014/15 the planned outputs for the project were:

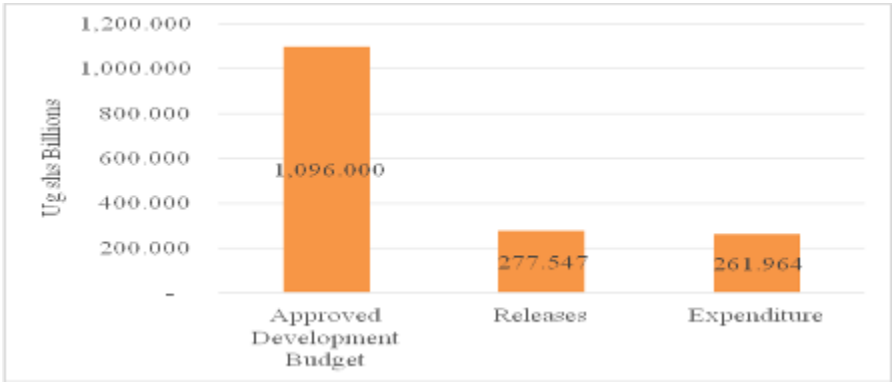
a) Institutions (churches mosque and Karuma Primary school) relocated.
b) Construction of the Resettlement Houses commenced.
c) PA Ps within the affected and host communities sensitized.
d) Implementation of the Community Development Action Plan (CDAP) and the Environment and Social Management Plan (ESMP) supervised and Monitored.
e) Construction of Karuma HPP Commences. (20%) of the Works Covered.
f) Contribution by GOU towards the 20% construction of the Karuma HPP.

Findings

Financial performance

The approved GoU development budget for the Karuma Hydroelectricity project in FY2014/15 is Ug shs 1.096 trillion of which 25% of the budget was released by the end of December, 2014. Release performance was fair. By the end of December 2014, 94% of the released funds were spent. This was an excellent absorption. The released funds were expended on the line item of other structures under the output of large hydropower infrastructure.

Figure 7.9: Financial performance for the Karuma Hydropower Project



Source: IFMS Data

The contract sum for the EPC of the Karuma Hydro Power Project (HPP) is US$1.398 billion. By the end of December, 2014, GoU had disbursed 15% contribution equal to US$ 210 million. These funds were to facilitate the construction works which had initially been implemented using contractors own resources. Synohydro had also submitted a request for the interim payment certificate no. 1 for the works done since the commencement of the project.

Physical performance

Table 7.14 shows the physical performance of Project 1183 as of 31st December, 2014. Overall physical performance of the project was fair. Progress was registered on all the planned outputs. However, the pace of power plant construction was slow.

Table 7.14: Physical Performance of Project 1183: Construction of Karuma Hydropower Plant

Planned output	Observed physical performance
Institutions (churches mosque and Karuma Primary school) relocated	By the end of December, 2014; BAKS services had been contracted as the consultant to design the institutions of churches, mosque and Karuma primary school; participate in the procurement of the contractor and supervise the construction works. The consultant started works in January 2015 for a period of six months.
Construction of the Resettlement Houses commenced	The land on which the 119 vulnerable and Physically Displaced Persons are to be resettled was identified in Zambia village near Karuma. The land was to be evaluated by the CGV. The process to procure a consultant to design and supervise the construction of the resettlement houses had also commenced.
The PAPs within the affected and host communities sensitized.	Three sensitization workshops were undertaken. This is a continuous activity until the project is completed.
Implementation of	A draft report for the community development action plan had been completed.

the Community Development Action Plan (CDAP) and the Environment and Social Management Plan (ESMP) supervised and Monitored.	The stakeholders were reviewing the report. Procurement of the consultant and the contractor to implement the plan was expected to be done in the Q3 FY2014/15. The MEMD also continued to monitor safety and environmental issues at the Karuma HPP site. The MEMD was also to establish an environmental monitoring committee composed of various stakeholders including NEMA, MEMD, and MWE.
Construction of Karuma HPP Commences. (20%) of the Works Covered.	Overall project progress was at 8% of the construction works at the Hydropower plant. Major construction works continued at the Escape and Ventilation Channels and the Main Access Tunnel. Excavations of adits that are to provide access routes for excavations of the main tunnels were ongoing. Other construction works on site included; construction of the power intake chamber, diversion channels, labor camps, mechanical workshops, quality control laboratories, and ware-house. The permanent site office for the contractor had been completed and had been occupied.
Main Access Tunnel	A total of 836 metres (63%) of the 1324 meters had been excavated. Major works were underground excavations which were ongoing by the time of monitoring.
Escape and Ventilation Channel:	A total of 680 meters (67%) of the 1021 meters had been completed. The EVT construction was behind schedule by 3.5 months.
Excavations of Adits and outfall	Three adits were under constructions that are to provide access to the excavations of the tailrace channels. 245 meters (22%) of the 1129 meters had been completed for adit 8; 25 meters (4%) of the 697 meters had been completed for adit 9; while 32 meters (8%) of the 415 meters had been completed for adit 10. Excavations and construction of the Tail Race Tunnels (TRT) were to commence after completion of the adits. The TRT was behind schedule for about four months. At the outfall; slope excavations and construction works were ongoing.
Diversion channel	Overall percentage completion was at 35%. Some of the completed works included open excavations and construction of the transverse cofferdam. Although the consultant had found the construction methodology for the same to be incomplete, no revised document had been provided.
Aggregate processing systems	Synohydro had started the production of aggregates from the shifted aggregate processing plant to the left bank. The contractor was to arrange for proper washing of the aggregates and also to arrange for the sand classifier.
Concrete production system	Synohydro had deployed four concrete mixers for the MAT and EVT works. A batching plant of 60m^3/h capacity had been erected in the available land near the facilities area and production had started.

Camps and offices	The first stage houses for the contractor's camp were completed. The labour camps were 75% completed. The superstructures had been constructed and processes to roof were to commence.
Road constructions	Progress of construction was about 65%. Plans were under way to lay concrete on the access roads to the powerhouse and to the power intake chambers.
Health Safety and Environment	A few workers developed a skin disease from the EVT possibly due to coming in contact with the chemicals being used. A few burns in the hands and other body parts had been noted for the workers in the MAT. This was to undergo further investigation. The HIV awareness campaign had been provided by Synohydro as part of their Corporate Social Responsibility to the community. A total of 300 community members were tested for HIV in October 2014. The workers were also provided with voluntary counseling on the 27th, November 2014. The contractor had provided an ambulance, which is equipped with all the necessary medical requirements. The contractor was to recruit a local and an international doctor for ease of communication in the working environment. The foreign practitioners had submitted their documents to the registration council at the Ministry of Health. In terms of safety on site, the contractor had failed to provide proper and requisite rock supports in the MAT and EVT at many locations. This was a threat to the safety of the workers in case of collapse of the tunnels. The case was more serious due to the type of rock (class II in EVT and class III in the MAT) that was being encountered during the excavations in the month of November 2014. Not all the Uganda workers had proper Personal Protective Equipment (PPE) to ensure that they are all covered and protected from the hazardous materials. Absence of a communication system in the tunnels was another issue of concern. The contractor had not provided even a temporary local electronic information exchange system in the tunnels as the permanent system is awaited. Lack of communication system makes it impossible to safe guard the workers in case of an emergency in the tunnels. During the month of November 2014, the contractor started preparatory work and access road construction for a new Adit 10 which is within the Karuma Wildlife Reserve Area and the construction of the access tunnel to the surge chamber without approvals from NEMA and UWA
Equipment mobilization	Some of the required equipment had been mobilized for instance; drill machines capable of drilling 5 meters deep were available but without an operator who was expected from China. Other equipment however like Drill jumbos had not yet been mobilized and yet these are essential for proper installation of the rock anchors and ensure adequate progress of the excavations. These were expected in February 2015.

Source: Field Findings; MEMD


L-R: Construction works on the Main Access Tunnel and Adit 9

Analysis

Link between financial and physical performance

By the end of December 2014, absorption rate for the project was 94%. There was 60% progress on project outputs indicating a weak link between physical and financial performance. The lower physical progress was due to the 8% performance of the construction works for the hydropower plant. The process of relocation of institutions and construction of resettlement houses had also just commenced.

Achievement of targets

Project performance was fair. Expenditure performance was 94% of the released funds. All the planned activities were under implementation by the end of December, 2014. Procurement of the consultants to have PAPs houses constructed, social institutions relocated were under way. Slow pace of implementation was only noted under the construction of the power plant as it was 8% completed.

Conclusion

The project is three months behind schedule. Some issues of health, safety, and environment were not fully adhered too. Some good points were noted as excavations of the EVT, MAT, Adits, and diversion channels were ongoing. Camps for the contractor and labour were at different levels of completion. Procurement of the consultant to complete the RAP for the affected persons had also commenced. The project was affected by the limited compliance by the contractor and the financing agreement, which had not been concluded.

Recommendation

- The Commissioner Electrical of MEMD and Energy Infratech PVT LTD should prevail on the contractor to ensure complies with all the required conditions.
- MFPED should fast track the finalization of the financing agreement between China EXIM bank and GoU.

Vote Function 0303: Petroleum Exploration, Development and Production

The vote function effectively monitors all petroleum operations in the country for the exploitation of the petroleum resource in an economically and environmentally conducive manner. The new legislation, the creation of new institutions and the strengthening of existing ones will be undertaken to effectively carry out various mandates of the vote function. The vote function took up 4% of the sector development budget.

7.2.9 Project 1142: Management of Oil and Gas

Background

The GoU and the Royal Government of Norway finance the project. The Goal of the programme is; to contribute to the achievement of the goal of the National Oil and Gas Policy (NOGP). The goal of NOGP is "To use the country's oil and gas resources to contribute to early achievement of poverty eradication and create lasting value to society". The specific purpose is to put in place institutional arrangements and capacities to ensure well-coordinated and results oriented resource management, revenue management, environmental management and Health Safety and Environment (HSE) management in the oil and gas sector.

The Programme is implemented under the three Pillars of Resource Management, Revenue Management and Environment Management. It is coordinated by the Ministry of Energy and Mineral Development, Ministry of Finance Planning and Economic Development (MFPED) and the National Environment Management Authority (NEMA) respectively.

The Pillars are supported at Programme Management level by the Programme Secretariat. Total Funding of 80,000,000 NOK for 5 years (2009 to 2014) for the three pillars to be supported by Programme Management / Coordination Secretariat was approved. The project started in September, 2009 with an expected completion date of June, 2017.

Annual Planned outputs for FY2014/15 include;

- Promotion of the areas that are not licensed through sale of data packages, presentations at international conferences and in-house meetings with investors achieved.
- The 1st Licensing round in the country prepared;
- The seismic speculative surveys in unlicensed areas prepared;
- The country's undiscovered petroleum resources assessed
- New Regulations and guidelines for the upstream activities developed;
- Model Production Sharing Agreement (PSA) reviewed and updated;
- Monitoring and Evaluation (M & E) strategy for the National Oil and Gas Policy (NOGP) implemented;
- The National Content Policy and Strategic Plan for oil and gas sector developed
- National expertise for the oil and gas developed and maintained;
- Training at formal, industrial and on-the-job level both abroad and in the country for both existing and new staff
- Field operations and exploration costs uncured by licensees monitored;
- Petroleum Data efficiently managed;

- Environmental Impact Assessments (EIAs), Drilling and Field Development programs, well monitored;
- Well proposals and Production Reservoir reports assessed;
- The country's petroleum reserves estimated and classified
- Information on oil and gas disseminated
- Stakeholders sensitized on the ongoing oil and gas activities in the country;
- Media reporting on the oil and Gas sector improved.
- Regional Conferences and eight regional meetings on oil and gas developments attended.
- New Institutions that is PAU, NATOIL and Petroleum Directorate established
- Construction of Phase-3 of the new Data Centre;
- Maintenance of existing buildings and related infrastructure undertaken;
- Rent of buildings for activities of the new Institutions paid.

Findings

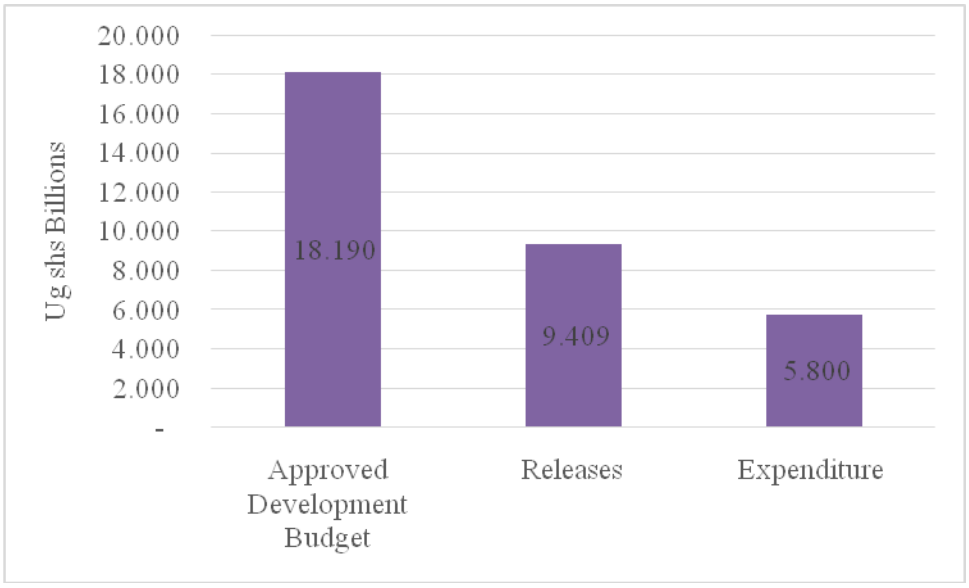
Financial performance

The approved GoU Development budget for the management of oil and gas project in FY2014/15 is Ug shs 18.190 billion of which 52% was released by the end of December 2014. Expenditure performance was good at 62% of the released funds.

Distribution of expenditure by line items was significant on allowances, which took up 31% of the expenditure. This is attributed to the large investment in the capacity building of the staff who study from abroad and those that monitor operations of the oil companies in the Albertine graben. The staff was provided with allowances to execute these activities.

Non-residential buildings where the construction of the data center falls took the next high level of expenditure. Transfer to other government units took up 11%.The new units of NOC and PAU are facilitated under this line item. Staff training took up 9% while the rest took up between 7% and 0% of the expenditure for the project. Figure 7.10 shows the financial performance of project 1142.

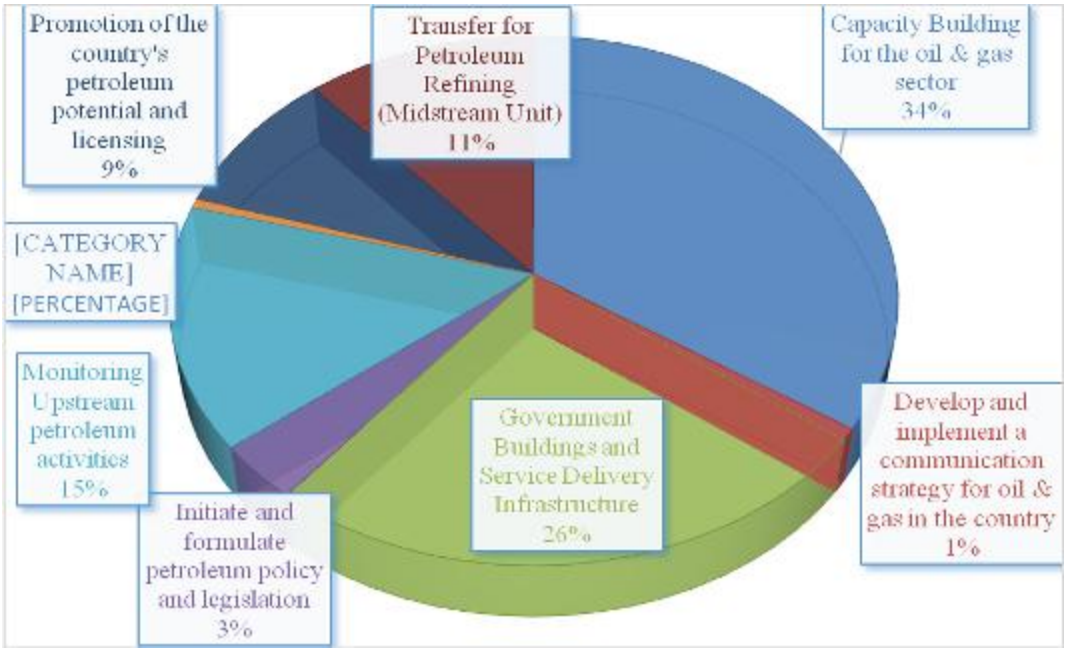
FIGURE 7.10: FINANCIAL PERFORMANCE FOR THE PROJECT: 1142



SOURCE: IFMS DATA

Figure 7.11 shows the expenditure by outputs categories. As indicated, the bulk of expenditure was on capacity building at 34% and Government Buildings and Service Delivery Infrastructure at 26%. The other outputs took up varied shares of the expenditure

Figure 7.11: Distribution of Expenditures by Output categories for Project: 1142



Source: IFMS Data

Physical performance

Various activities were under taken on the different outputs of the project by the end of 31st, December, 2014. A consultant for the country's first competitive licensing round was procured; the final drafts of the upstream regulations were completed and Directorate of First Parliamentary Counsel (FPC) formally submitted the drafts to MEMD for review. Eight (8) staff commenced Master's degree programs in petroleum Geosciences, Economics, Law and Business Administration, at Universities abroad; applications for production licenses, and Field Development Plans (FDPs) and Petroleum Reservoir Reports (PRRs) for Jobi-East and Mpyo fields in EA1 were reviewed. The table 7.15 summarizes the physical performance of the Management of Oil and Gas project.

Table.7.15 Summary of Annual Planned outputs and Physical performance

Annual Planned output	**Physical performance up to December, 2014**
030301 Promotion of the Country's Petroleum Potential and Licensing	
The areas that are not licensed through sale of data packages, presentations at international conferences and in-house meetings with investors promoted	The country's petroleum potential presented at three (3) international conferences in Society of Exploration Geophysicists (SEG) convention in Denver USA, Global African Investment Summit, UK and Society of Petroleum Engineers (SPE) Africa Health, Safety, Security, Environment and Social Responsibility conference
The 1st Licensing round in the country prepared	Procured a consultant (IPAN) for the country's first competitive licensing round and work commenced. Bid tender documents of the first Licensing Round developed
The seismic speculative surveys in unlicensed areas prepared The country's undiscovered petroleum resources assessed	Economic evaluation and rankings of blocks in available acreage for 1st licensing round continued; Ministry of Finance issued the MEMD with certificate of financial implications for the licensing
030302 Initiate and Formulate Petroleum Policy and Legislation	
New Regulations and guidelines for the upstream activities developed;	The final drafts of the Upstream regulations were completed and Directorate of First Parliamentary Counsel (FPC) formally submitted the drafts to MEMD for review
Model Production Sharing Agreement (PSA) reviewed and updated	Development of the new Model PSA commenced and a "zero draft" was finalized and made ready for sharing with the Consultant. Completed model contractual agreements for seismic data acquisition, processing, marketing and sale of data.
Monitoring and Evaluation (M & E) strategy for the National Oil and Gas Policy (NOGP) implemented	Procurement of a consultant to implement the M and E still under review by the Contracts Committee
Development of the National Content Policy and Strategic Plan	Development of the National Content Policy entered the final stages with a local consultant engaged to customize its

for oil and gas sector	presentation format.
030303 Capacity Building for the Oil and Gas Sector	
National expertise for the oil and gas developed and maintained; Training at formal, industrial and on-the-job level both abroad and in the country for both existing and new staff.	Six (6) staff continued to undertake undergraduate training in the country. Eight (8) staff commenced Master's degree programs in petroleum Geosciences, Economics, Law and Business Administration, at Universities abroad. One officer attended the National Oil Companies Summit in UK. Supported training of 21 Government officials in Change Management. Supported training of 31 Government officials in Petroleum Revenue Management. Supported training of 21 Government officials in Arbitration in the Oil and Gas industry. Two (2) staff undertook a two-weeks training in Oil and Gas Management and Business Administration, conducted by CWC School for Energy in Texas USA. One study visit to Trinidad and Tobago, on licensing strategy was undertaken.
030304 Monitoring Upstream Petroleum activities	
Field operations and exploration costs uncured by licensees monitored; Environmental Impact Assessments (EIAs), Drilling and Field Development programs, well monitored;	PEPD staff is deployed in the field and report on a daily basis the status of ongoing petroleum exploration activities. The activities monitored included the following. River Nile-crossing geophysical survey in EA1 (Paraa- Pakwach area) completed; Two well sites (Jobi-East 4 and Rii-2) restored in EA-1; Kingfisher-4 well spudded, drilling ongoing and monitoring of the drilling continuing in Kingfisher Development Area (KFDA); Compensation payments for affected crops during 3-D seismic survey in EA1 were made; Completed survey and valuation exercise for land utilized for access roads and drilling of wells in EA-2
Well proposals and Production Reservoir reports assessed;	Reviewed applications for production licenses, Field Development Plans (FDPs) and Petroleum Reservoir Reports (PRRs) for Jobi-East and Mpyo fields in EA1; Reviewed the revised FDPs and PRRs for Jobi-Rii fields in EA1; Reviewed the revised FDPs and PRRs for Kasamene-Wairindhi (KW), and Kigogole-Ngege-Ngiri-Nsoga (KNNN) fields in EA2;
030305 Develop and implement a Com strategy for the Oil & Gas Sector	
Information on oil and gas disseminated; Stakeholders sensitized on the ongoing oil and gas activities in the country;	Held radio programs in Central Region on six radio stations to discuss National Participation in oil and gas sector; Held two radio talk shows in the Albertine Graben; Held sensitization workshops in Hoima for District and Sub-

Media reporting on the oil and Gas sector improved	County Community Development Officers from the operational areas; Held three engagements with Civil Society Organizations; Responded to ten media inquiries; Organized and held one breakfast meeting for editors and one workshop for reporters Facilitated training for 12 journalists and 15 editors organized by Africa Centre for Media Excellence (ACME); Procured firm to produce documentary on oil and gas; Website was re-designed and is in testing/piloting phase; Prepared responses to media inquiries and press statement for Request for Final Offers for Lead Investor for Refinery.
030306 Participate in Regional initiatives	
Regional Conferences and eight regional meetings on oil and gas developments attended.	Participated in two (2) meetings on Tripartite Agreements/MOU in Kenya; Hosted 3rd Steering Committee meeting on the 7th EAPCE conference in Hoima town including a preparatory field excursion in the Albertine Graben; Participated in three (3) Steering Committee meetings on the 7th EAPCE conference, planned to be held in Kigali, Rwanda.
030351 Transfer for Petroleum Refining (Midstream Unit)	
Establishment of new Institutions i.e. PAU, NATOIL and Petroleum Directorate.	The four Transitional Units (Policy, Regulatory, Commercial and Infrastructure) in PEPD continued to operate as the Ministry puts in place the new institutions (Directorate of Petroleum, Petroleum Authority and National Oil Company). The Board of the National Oil Company was nominated while that of the Petroleum Authority is being finalized; The review of posts in the structure for the Directorate of Petroleum was undertaken under the Ministry restructuring exercise.
030372 Government Buildings and Administrative infrastructure	
Construction of Phase-3 of the new Data Centre; Maintenance of existing buildings and related infrastructure undertaken; Rent of buildings for activities of the new Institutions.	Supervised Phase-2 construction of the National Data Repository and Office building at Entebbe. 95% Phase-2 completed. Procured consultancy services to re-design and supervise 3rd phase construction including the access road. Rent for the buildings was paid.

Source: Field Findings; PEPD Entebbe

Field findings

Half year field monitoring focused on two outputs of construction of the data center under the Government Buildings and Administrative infrastructure and Monitoring Upstream Petroleum activities.

a) Office Building and national Data repository/ Data center

Background

The MEMD is currently constructing an office building and National Data Repository at Plot 21-29 Johnstone Road-Entebbe after Uganda Wildlife Education Centre. This building will accommodate a modern National Data Repository, laboratories, core store and offices among others. The four storied building was designed with over 3500 square meters of office space to accommodate the new Petroleum Directorate which includes the Upstream, Midstream and Downstream Departments as well as the Petroleum Authority of Uganda.

Annual planned outputs

- Phase 2 of the data centre completed
- Construction of phase 3 commenced
- Access road rehabilitated

Financial performance of the data center

The contract for construction was awarded to Pearl Engineering Company Ltd at a contract amount of Ug shs 9,060,265,560. By the end of December 2014 Ug shs 7,408,156,307 (82%) of the contract amount had been paid to the contractor. Table 7.16 summarizes the payments to the contractor.

Figure: 7.16: Financial performance of the Data Centre construction

Date	Item	Particulars	Amount Paid (Incl. 18% VAT)	Balance
		Total Contract Amount		9,060,265,560
26/09/2012	1	Advance 20% of contract price	1,812,053,112	7,248,212,448
26/03/2013	2	Payment, Interim certificate No.1	508,216,626	6,739,995,822
31/05/2013	4	Payment, Interim certificate No.2	580,574,070	6,159,421,752
21/06/2013	5	Payment, Interim certificate No.3	429,290,224	5,730,131,528
13/08/2013	6	Payment, Interim certificate No.4	395,387,468	5,334,744,060

Date	Item	Particulars	Amount Paid (Incl. 18% VAT)	Balance
23/09/2013	7	Payment, Interim certificate No.5	256,885,221	5,077,858,839
7/10/2013	8	Payment, Interim certificate No.6	320,420,939	4,757,437,900
5/11/2013	9	Payment, Interim certificate No.7	506,578,347	4,250,859,553
3/12/2013	10	Payment, Interim certificate No.8	625,375,849	3,625,483,704
11/02/2014	11	Payment, Interim certificate No.9	483,653,090	3,141,830,614
25/03/2014	12	Payment, Interim certificate No.10	472,593,115	2,669,237,499
13/06/2014	13	Payment, Interim certificate No.11	262,372,199	2,406,865,300
23/12/2014		Payment, Interim certificate No.12	754,756,047	1,652,109,253
				1,652,109,253
				1,652,109,253
TOTAL			7,408,156,307	

SOURCE: PEPD

The contract for supervision of the construction works was awarded to Design Group & Associates at a contract amount of Ug shs 315,190,952. By the end of December 2014, Ug shs 191,387,070 (61%) of the contract amount including the reimbursable expenses of Ug shs 2,272,500 had been paid. The details of payments are presented in table 7.17

Table 7.17: Summary of Payments to the Supervision Consultant

Date	Item	Particulars	Amount Ug shs	Payments Ug shs	Balance Ug shs
	1	Total Contract Amount	315,190,952		
24/07/2013	2	Payment, Interim certificate No.1		63,038,190	252,152,762
24/07/2013	3	Reimbursable expenses		2,272,500	249,880,262
02/05/2014	4	Payment, Interim certificate No.2		126,076,380	123,803,882

Totals			315,190,952	191,387,070	123,803,882

Source: PEPD Entebbe

Physical performance of the data center

Construction of the data center started in February 2013 with an expected completion date of July 2014. By end of December 2014; 95% of the works for phase two had been completed. The key outstanding works were roofing of the middle tower of the building. The consultant for phase 3 was also procured and submitted the building finishing designs for review. The procurement of the contractor for phase 3 of the building and the access road was at contracts committee stage.

Phase 2: Data Repository Centre; 95% completed. To accommodate Petroleum Directorate; PEPD offices: Entebbe

b) Monitoring of upstream activities

The monitoring during the first half of the FY2014/15 focused on operations of the three oil companies of: China National Offshore Oil Company (CNOOC), Total Exploration and Production, and Tullow Uganda Operations Pty Ltd operations in their respective exploration areas.

Kingfisher Development Area

Background

China National Offshore Oil Company (CNOOC) operates this block after the farm in and farm out of CNOOC and Tullow Uganda Operations Pty Ltd respectively in 2012. The total area of the field is 344 square Km. CNOOC obtained the production license in September, 2013 upon which the development phase started.

Physical performance

In FY2014/15 the key activity areas were; the construction of the Kingfisher oil field access road via the escarpment; drilling operations , constructions in the camp and materials yard and RAP implementation for the PAPs affected by the road construction.

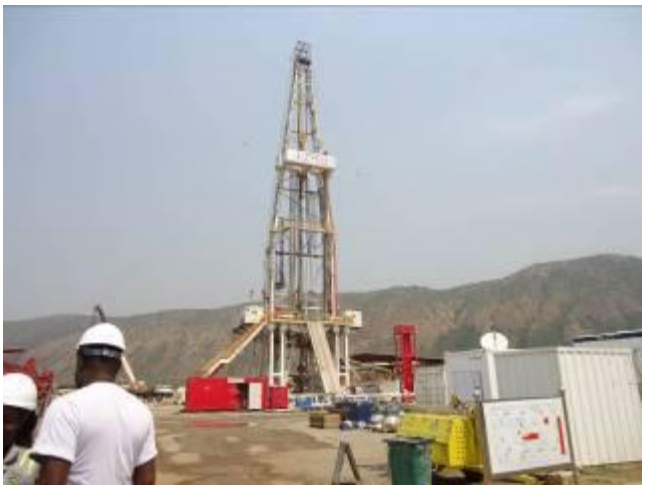
a) Kingfisher oil field access road

The CNOOC awarded the contract for the road construction to China Communication Construction Company (CCCC) at contract sum of US$180,000. The road is to enable access by road to the development area, which has not been possible. The area has previously been rugged, steep and extremely inaccessible.

The contractor is to construct 18 Km of the road with 12 Km with in the field and 6Km along the escarpment. The access road in the field is to serve the different production wells and the Central processing facility. By January, 2015 contractor was on site, rock blasting and excavations was ongoing. The box culverts establishments had been completed in some sections of the road.

Left -Right: Preparation for blasting of the rock to create access road; Road network to Field Development Area being developed

b) Drilling operations



Rig mobilized to carry out well testing at the Kingfisher Development Area

The start date was 3rd, September, 2014 for the oil well. Drilling was up to a total depth of 4349 meters. Hydrocarbons were encountered at 40221 meters below the ground. By January 2015; CNOOC was collecting samples, carrying out well testing to ascertain the potential for the well. Data collection was also ongoing. The data included; the pressure data for the well. CNOOC noted that the equipment was to be demobilized by end of January upon which the well would be suspended.

c) Camp and materials yard construction activities

The camp was substantially complete by October 2014. It measures 185 square meters. The camp has four blocks for accommodation, one for a clinic, the three for office space, dining hall and Kitchen. The facility utilizes solar energy to supply the camp. It has constructed water tanks and service bay for their equipment. The materials yard was also completed during the period July- December 2014. The materials yard is used to store equipment like rigs, drilling pipes among other equipment.

d) Resettlement Action Plan

Four people were affected by the road construction project and they preferred in kind compensation. The PAPs were resettled on community land. The construction of the houses started in April 2014 with an expected completion of February 2015. The constructed houses are four bed-roomed, a Kitchen house, and a latrine. The package also included a 5000 liters water tank. The four constructed houses were completed and were to be handed over by end of February 2015. The key outstanding works were attending to the compound of the houses which included watering of the planted grass. The quality of work was good.

Left-Right Resettlement Houses; Inner View of the resettlement houses for PAPs compensated for getting physically displaced to construct Road to the FDA

Exploration Area (EA) 1

Total Exploration and Production company operates the EA1 which is largely located in the Murchison falls national park. The company carries out seismic data acquisition, and drilling of oil wells for discovery, exploration, and appraisal purposes.

Physical Performance

Total E and P had submitted the Field Development Plans and Petroleum Reservoir Reports to PEPD for study and possible award of the production license. By the end of December 2014 the key activities that were ongoing were restoration of the oil wells that had been drilled. Restoration included planting of grass in areas where there were the oil well pads. The access

roads to such areas had also grass replanted. The restored oil wells included: Mpyo V, Mpyo VII, and Mpyo III. These were restored between August and November 2014.

In January 2015, Total was also moving waste that had been generated by Heritage oil in 2009 from Purongo to Nyamasoga where a waste treatment plant is to be established. The movement of waste commenced in November and was expected to be completed in February 2015. Percentage completion of waste management treatment was at 82% as about 100 tones were still pending movement.

L-R: Site restoration of the oil well that had been drilled; Waste management Facility in Porungo

Exploration Area (EA) 2

Background

Tullow Uganda Operations Pty Ltd operates exploration EA2. The company carries out seismic data acquisition, and drilling of oil wells for discovery, exploration, and appraisal purposes.

Physical performance

Tullow Uganda Operations Pty Ltd had submitted the Field Development Plans and Petroleum Reservoir Reports to PEPD for study and possible award of the production license. The key activity ongoing was restorations of the oil wells that had been drilled.

By end of December, the company had restored Taitai 1 and Karuka. The other wells that were plugged, abandoned and were under restoration were Ngasa I and II. Tullow Uganda Operations Pty Ltd was also in the process to have PAPs compensated for the land that it used during the exploration, discovery and appraisal activities. This includes areas for well pad and access road to the well pad. The company had also trained the PAPs prior to compensation on proper use of the funds.

Reconstruction of a primary school to serve the Kyehero and Kaiso villages was also ongoing. The school which had earlier been constructed by the same company had one classroom block develop cracks due to the rift valley faulting in the area. These were reconstructed by the end of December 2014.


School that was serving Kaiso and Kahero villages; Corporate Social Responsibility: School constructed for Kaiso and Kahero villages

Analysis

Link between physical and financial Performance

By the end December 2014, the project had utilized 62% against the 67% average physical achievement. This represents a good link. This is due to some cumulative performance of the data centre which was at 95%. Other outputs like; promotion of a country's petroleum potential and licensing, capacity building for the oil and gas sector and monitoring of upstream petroleum activities progressed well.

Achievement of targets

Project performance was good. All the planned activities progressed well. For instance, the consultant (IPAN) for the country's first competitive licensing round was procured and the consultant commenced work; the final drafts of the upstream regulations were completed and Directorate of First Parliamentary Counsel (FPC) formally submitted the drafts to MEMD for review; The Field Development Plans and the Petroleum Reservoir Reports were reviewed. The Board of the National Oil Company was nominated while that of the Petroleum Authority is being finalized.

Conclusion

The performance of the project activities was good. All the planned activities had been implemented though not completed by the end December 2014. Construction of the data centre was at 95% against 82% payments to the contractor, reviews of the petroleum reservoir reports and the field development plans from Total E and P and Tullow Uganda Operations Pty Ltd progressed but at a slow speed. Absorption of the released funds was at 62%. The CNOOC recorded good progress in the development phase of the king fisher development area as drilling and well testing were ongoing, construction of the access road among other operations. Project implementation is majorly affected by inadequate staff who cannot manage efficiently all the operations of the project. The reviews of the production license applications have for instance taken over six months.

7.2.10 Project 1184: Construction of the Oil Refinery Project

Background

There was a significant exploration success in 2006 which determined that the Albertine Graben contained sufficient oil reserves. The discoveries are currently estimated at 3.5 billion barrels of oil in place and about 1.2 billion barrels of recoverable oil[16].

Following the exploration success in Uganda, MEMD formulated a Refinery Development Program (RDP) to guide the development of the refinery and its associated infrastructure. As a step towards implementing the RDP, GoU undertook a feasibility study for the development of an oil refinery which was completed in August 2010. The study determined that it is feasible to develop an oil refinery. The Public Private Partnership project commenced in July 2011 and is expected completed in June 2016.

The main objectives of the project are to;

i. Develop an appropriate legal and regulatory framework for crude oil refining and related infrastructure
ii. Plan for the development of the refinery, pipelines, storage facilities and related midstream infrastructure
iii. Contribute to capacity building in new emerging areas of crude oil valuation and midstream petroleum operations
iv. Develop an appropriate modern institutional framework for crude oil refining and related midstream petroleum operation
v. Promote private sector participation in the development, operation of refineries and related infrastructure
vi. Promote regional and international cooperation in development of refineries and related infrastructure.

The MEMD planned outputs for FY2014/15 include;

- Regulations for midstream petroleum operations developed and issued
- Standards and Codes for midstream petroleum operations are developed and issued
- The development of a crude export pipeline promoted
- Investment for the pipeline and storage facilities promoted
- Development of petrochemicals and energy based industries promoted
- Plans for gas conversion and utilization developed
- A reliable database of the list of investors who have expressed interest in midstream infrastructure development in Uganda updated and maintained
- Human resource capacity for crude oil refining, gas processing and utilization, transportation and storage developed and maintained
- Mid-stream institutional framework implemented
- National Strategic Plan for the development of pipelines and storage facilities developed
- Recommendations of the National Strategic Plan for development of pipelines implemented

[16] MFPED; Public Investment Plan FY2014/15- 2016/17

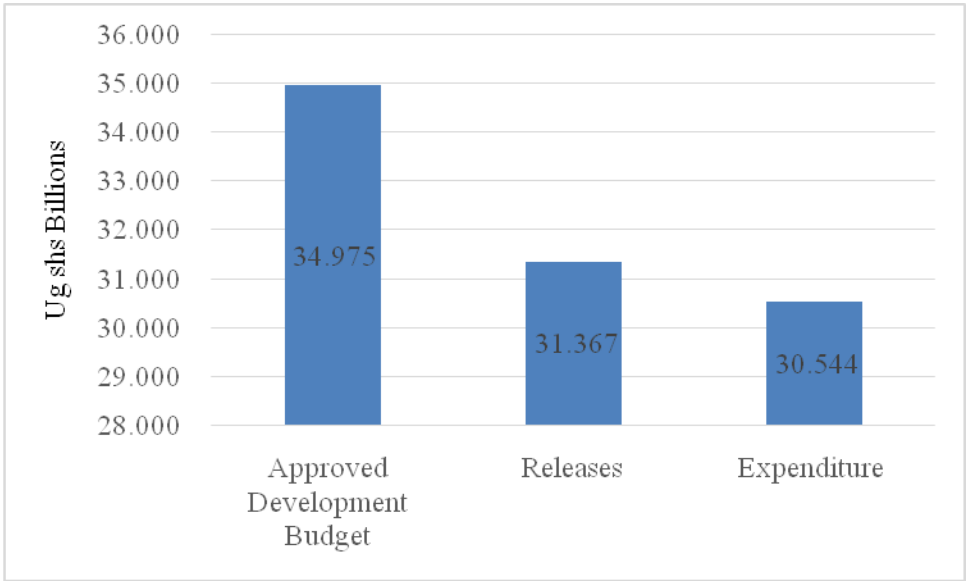
- Detailed route survey for crude oil pipeline from the fields to the refinery and products pipeline from the refinery to Buloba Terminal concluded
- Planning for way leaves for the crude oil pipeline from the fields to the refinery and products
- Pipelines from the refinery to distribution and storage centres concluded
- Environmental Baseline Study for pipelines undertaken
- Acquisition of land for the refinery development concluded
- Master plan and detailed engineering design study for the aerodrome development concluded
- Coordination of the activities of the lead investor

Findings

Financial performance

The approved GoU development budget for FY2014/15 is Ug shs 34.975 billion of which 90% was released. This represents excellent release performance from MFPED to fast track project implementation. Expenditure performance was excellent at 97% of the released funds. Figure 7.12 shows the financial performance for Project 1184 as at 31st December, 2014.

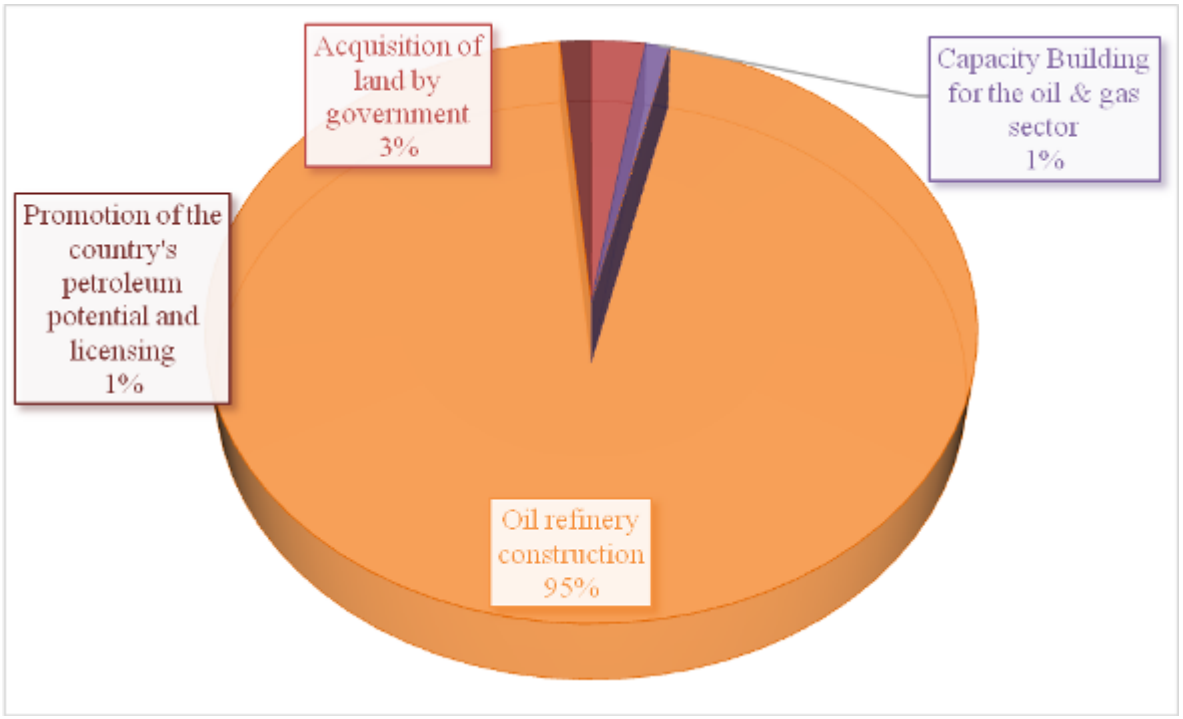
Figure 7.12: Financial performance for the Project: 1184



SOURCE: IFMS DATA

Ninety Five percent (95%) of expenditure was made on the oil refinery construction, which is the core output for the project. Monitoring, Supervision and Appraisal of Capital Works took share of 2%, while Contract Staff Salaries (Incl. Casuals, Temporary), Engineering and Design Studies and Plans for Capital Works and staff training to took up a share of 1% each of the expenditures. This is shown in figure 7.13 below.

Figure 7.13: Distribution of expenditure by output names for project. 1184



Source: IFMS Data

Physical performance

Table 7.18 provides a summary of the performance of the Construction of the oil refinery project. The project performance was good especially the RAP that used all the money received to pay the PAPs.

Table 7.18: Performance of Construction of Oil Refinery Project as at 31st December 2014

Annual Planned output	Physical performance up to December,2014
030301 Promotion of the Country's Petroleum Potential and Licensing	
Regulations for midstream petroleum operations developed and issued Standards and Codes for midstream petroleum operations are developed and issued Promote the development of a crude export pipeline Investment for the pipeline and storage facilities promoted	Consultations on the draft regulations ongoing 11 standards developed Participation in the regional summits to encourage regional infrastructure development Investors' database maintained and updated.
030303 Capacity Building for the Oil and Gas Sector	
Human resource capacity for crude oil refining, gas processing and utilization, transportation and storage developed and	Two officers continued training at Masters' Level in Pipelines Engineering at the University of New Castle and Oil and Gas Law in University of Dundee, UK.

maintained Mid-stream institutional framework implemented	Two officers completed training at Masters' Level in Energy and Mineral Economics at the Curtin University, Australia and MSc. in Pipeline Engineering at Cranfield University, UK. Four officers participated in a training workshop on Project Planning and Management from Uganda Management institute. Two officers trained in Effective Contract Management at Uganda Management institute. Two officers participated in a training in oil operations and logistics in Geneva. Two officers undertook training in design of crude oil export pipeline and facilities in Tokyo, Japan. Two officers attended the Platts African Refining Summit in Cape Town, SA. One officer attended the Skills Transfer for National Oil Companies workshop in Johannesburg, SA.
030371 Acquisition of Land for Midstream Infrastructure	
National Strategic Plan for the development of pipelines and storage facilities developed Recommendations of the National Strategic Plan for development of pipelines implemented	Hoima – Kampala Multi-products pipeline Final report for the National Strategy and plan for petroleum Transportation and storage submitted. The recommendations were yet to be considered.
Planning for way leaves for the crude oil pipeline from the fields to the refinery and products pipelines from the refinery to distribution and storage centers conclude	Technical Evaluations for the consultancy services for the Environmental Baseline Survey and detailed routing for the Infrastructure Corridor from Hoima to Kampala completed in December 2014.
Environmental Baseline Study for pipelines undertaken	Crude Export pipeline The Governments of Uganda, Kenya and Rwanda agreed to conduct a feasibility study and preliminary engineering design, to assess and evaluate the most feasible routing as well economic viability of the project. Feasibility study and preliminary engineering design for export pipeline commenced in November 2014. Consultant submitted and presented the Inception report in December 2014.

Detailed route survey for crude oil pipeline from the fields to the refinery and products pipeline from the refinery to Buloba Terminal concluded	The export pipeline will be developed as a joint infrastructure by the East African Community Partner States.
030380 Oil Refinery Construction	
Acquisition of land for the refinery development concluded	1,945 out of 2,615 were paid as at end of December 2014 making about 74.38%. This leaves a balance of 670 to be compensated Out of the remaining 670 property owners, a total of 42 property owners raised a dispute contesting the rates, however continuous engagements are ongoing to have these disputes resolved. Disclosures for the remaining 628 property owners commenced in December 2014 and payments expected to be completed by June 2015. A total of 533.59 acres of land was purchased to relocate and resettle the 93 Property Owners that opted for resettlement and physical planning works commenced. As part of the Resettlement Action Plan under the livelihood restoration programme, a follow up visit was conducted to a group of property owners who were compensated. The visit established that some of the property owners had settled and integrated in the new communities by constructing permanent residential and commercial buildings. More follow up visits are to be undertaken.
Master plan and detailed engineering design study for the aerodrome development concluded	The Ministry in conjunction with Ministry of Works and Transport and Civil Aviation Authority plan to develop a master plan and detailed engineering design for an airport at Kabaale, Hoima. The Terms of Reference for consultancy services for the assignment were developed in consultation with International Civil Aviation Organization (ICAO). Single sourcing for a consultant was initially conducted but was unsuccessful since the consultant quoted a high cost for the assignment compared to the available budget. Hence in order to achieve value for money for the assignment, the Ministry, CAA through ICAO progressed with the restrictive competitive bidding procurement process. The deadline for submission of the bids was 12th January 2015 and thereafter evaluation of the bids was to commence
Coordination of the activities of the lead investor	On identifying the lead investor for the refinery, the process has progressed with two preferred bidders selected namely, SK Group - led Consortium (Republic of Korea) and RT Global Resources - led

	Consortium (Federation of Russia). Continued monitoring and working with the Transaction Advisor to develop the legal documentation for the lead investor. Evaluation for Final Offers from the two bidders are on-going

Source: Field Findings

Field findings

During the half-year performance, monitoring the output of refinery construction was reviewed. Specifically land acquisition was the focus to ascertain level of compensation and obtain views from the PAPs on the process of compensation

By the end of December 2014, 1,945(74%) out of 2,615 were paid. The disclosures for the outstanding 628 PAPS commenced in December 2014 and payments expected to be completed by June 2015.

The MEMD purchased 533.59 acres of land in Kyakaboga village in Buseruka sub-county to relocate and resettle the 93 PAPS who were vulnerable and opted for resettlement. Topographical survey was completed and the Ministry of Lands and Urban Development had commenced the Physical planning works.

The MEMD is to construct a primary school and two churches for the resettled PAPs. The health Centre in Buseruka sub county is to be rehabilitated to serve the same people.

The team held interviews with the chairperson of Nyamasoga village and a sample of PAPs. A total of 82% of the interviewed PAPs were happy with the compensation package. However, a number of PAPs had not received their compensation package. Box 7.4 highlights some of the views of the PAPs that were interviewed concerning the progress of the land compensation.

Text box: 7.4: Views of the Project Affected Persons for the Refinery Development Project

An opinion leader and 12 PAPs from Buseruka sub county were interviewed

Mr. Baryesima Justus the chairman LCI Nyamasoga Village noted that: the compensation of the PAPs commenced in December, 2013. The most recently paid PAPs received their funds in December 2014. He noted that 78% of the PAPs had been paid by 19th January, 2015. He said that the compensation value for the land varied between Ug shs 3.5 million per Acre to Ug shs 10 million. The highest was for Kyaploni Trading centre. The chair asserted that land has now appreciated with the construction of the road to Kaiso Tonya and this worries the unpaid PAPs.

The Chair acknowledged that a number of the paid persons were happy with the package. These PAPs started construction of better houses. He Highlighted that some NGOs like AFIAGO, Global rights alert, and NAVODA were however mobilizing the PAPs to reject the disclosed packages.

From the discussions with the opinion leader, a few selected PAPs were interviewed to verify the comments of the Chairperson. Below are the extracts from the discussions.

i. *Mr. Komaketch Cissor from Nyamasoga village acknowledged receipt of Ug shs 23 million in November, 2014. This was for compensation for the 3.2 Acres of land, houses, crops, graves and disturbance allowance. He was happy with the package but he had preferred more money.*

ii. *Mr. Etoma Charles acknowledged receipt of Ug shs 280 million in 2013. This was*

*compensation for his 35 Acres of land, trees, and house. He was very satisfied with the package. He used the money to purchase 10 Acres of land outside the refinery land, two commercial houses in Hoima town, and a commercial lorry. He has also constructed his residential house, rentals and opened up a shop for the wife. He noted that, "**I have educated my children and also bought a maize grinding machine which gives me money monthly… my life has improved''***

The key general challenges included:

- Variations in the value of the land by village makes some PAPs feel that they are being cheated.
- Appreciation of the land in the neighborhood worries those not yet compensated.
- The unpaid have security threats since they are in dispersed in the land.
- Delay by the CGV to return new rates upon dispute of the values by the PAPs. The supplementary report took about 6 months before approval.

The PAPs displaying facilitated that they constructed after receipt of funds from the RAP compensation; Buseruka Sub county, Hoima district

Analysis

Link between physical and financial performance

The project utilized 97% of funds for 70% average physical progress representing a good link. By the end of December, a total of 1,945(74%) PAPs had been compensated for their property. A total of 533.59 acres of land was purchased to resettle the Vulnerable Physically displaced who preferred in kind compensation. The lower physical performance was attributed to activities which were still under procurement

Achievement of targets

Project performance was very good. Land acquisition by the end of December was at 74%. Land had been purchased for the resettlement of the PAPs who preferred in kind compensation. Technical Evaluations for the consultancy services for the Environmental Baseline Survey and

detailed routing for the Infrastructure Corridor from Hoima to Kampala completed in December 2014.

Conclusion

Progress of implementation was commendable. The project effectively utilized the released funds on the key pressing output of compensations. Process to identify the lead investor for the refinery has progressed. Two preferred bidders have been selected namely; SK Group - led Consortium (Republic of Korea) and RT Global Resources - led Consortium (Federation of Russia). Feasibility study and preliminary engineering design for crude export pipeline commenced in November 2014. The Consultant submitted and presented the Inception report in December 2014. The project did not have major challenges except some PAPs who disputed the values. The disputed values are being revaluated. Others PAP could not be paid using the limited available resource.

Recommendation

- The Budget directorate of MFPED should maintain the trend in front loading money for the compensation so that the outstanding PAPs can be compensated.

Vote Function: 0305 Mineral Exploration, Development & Production

Background

The vote function is responsible for the functions of the mineral sector. This involves mineral Exploration and Investment promotion. To achieve this objective the sub-sector undertakes collecting, collating, processing, analysing, archiving and disseminating geo-data, monitor and assist small scale miners and also enforce regulations in the sub-sector. The VF also undertakes airborne geophysical surveys to acquire airborne magnetic, radiometric and some electromagnetic covering the entire country. The vote function took up a share of 1% of the development sector budget.

7.2.11 Project 1199: Uganda Geothermal Resources Development

Background

Uganda still has unmet energy demand characterized by low access to electricity and load shading. The low access to cheap energy has effects like deforestation, which affect the Ugandan natural habitat. Exploitation of the geothermal resources (Use hot water springs areas) is a good alternative to increasing the energy mix for Uganda.

Uganda needs to have multiple uses of its geothermal resources to help improve economic efficiency of its geothermal resources. In general, geothermal resources above 150^{o}C are used for electric power generation, although power has recently been generated at Chena hot springs Resort in Alaska using 74^{o}C geothermal resource (Lund, 2006). Geothermal Resources are usually used for diverse direct use application like heating and cooling.

Geothermal Power is generated by using steam to turn a turbine-generator set to produce electricity. Geothermal energy can be used for many applications, which can spur social and economic development in rural areas where these resources exist. These are multiple-uses of heat from geothermal waters called direct use application. Direct uses for low and moderate temperature resources up to $150^{O}C$ involves using the heat in the water directly for; heating of buildings, industrial processes, greenhouses, aquaculture (growing of fish) and resorts.

The project started in FY2011/12 with the aim of surface and sub-surface mapping to ascertain the areas with springs which have potential to generate power. The project has so far identified and selected four sites of: Kibiro in Hoima district; Katwe Kirongo in Kasese; Panyimur in Amuru district; and Bunywamwara in Budibugyo district.

The objectives of the project are:

i. To carryout additional geophysical studies at Katwe, Buranga and Kibiro using Transient Electromagnetics (TEM), Magneto-tellurics (MT) and Gravity methods to probe deeper and
ii. identify the heat source and targets for deep drilling.
iii. To carryout detailed geological, geochemical and geophysical (MT, TEM and Gravity) surveys at Panyimur to delineate geothermal anomalous areas identify the source of heat and targets for deep drilling.
iv. To carryout additional hydrological and hydro geological surveys to study in detail the structures that control the fluid flow mechanisms in the four areas.
v. To update the current surface models based on geology, geochemistry, and geophysics; with
vi. additional geophysical surveys (TEM and MT), and hydrology and hydrogeology results, to
vii. come up with integrated models that will be a basis for locating deep exploration wells.
viii. To carryout sociological and environmental baseline studies and infrastructure assessment in the four areas.
ix. To select the most promising area for the feasibility study.
x. To carryout Environmental Impact Assessment for drilling in a selected prospect.
xi. To drill 3 deep geothermal exploration wells in one selected prospect with the aim to discover a geothermal reservoir.
xii. To install the first geothermal power plant.
xiii. To purchase equipment for geothermal exploration and well testing
xiv. To train Ugandans in exploration and resource testing, project design, operation and financing
xv. To put in place adequate Policy, Institutional and Regulatory frameworks for geothermal energy development

The Planned outputs for FY2014/15 include;

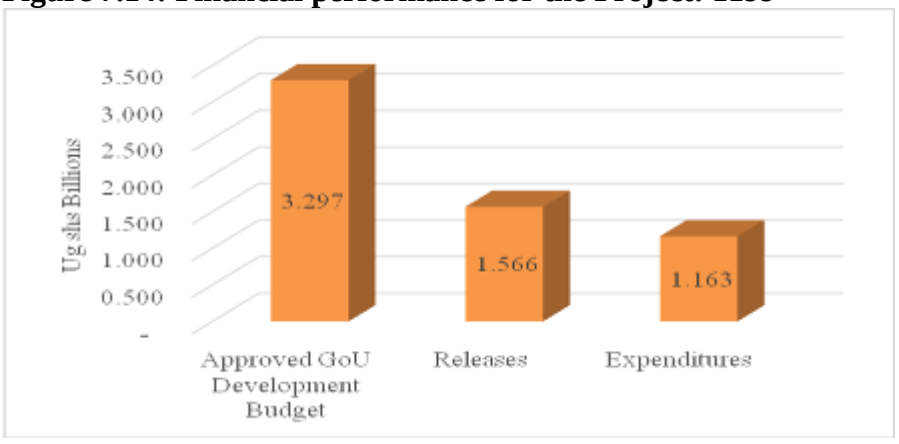
i. Consistent, effective and efficient regulatory framework for geothermal energy developed.
ii. Opportunities to advance geothermal energy projects identified.
iii. A geothermal Resources Department established

iv. A Communication and community awareness programme and Geothermal Technology developed:
v. Research and Development to support geothermal industry Technology Transfer undertaken:
vi. International partnership for geothermal technology (to provide framework for international cooperation in geothermal technology, policy and model development).
vii. Geothermal exploration; data acquisition and management carried out:
viii. Accurate and reliable information on geothermal resources in Uganda acquired.
ix. Three training and awareness campaign in safety issues during geothermal exploration to safeguard the health and safety of staff undertaken.
x. Personal Protection Equipment and Comprehensive First Aid Kits procured.
xi. Administrative reviews for compliance and geothermal inspections and monitoring undertaken.
xii. New investors licensed
xiii. All the Land with Geothermal resources surveyed and gazetted for geothermal development.
xiv. All the land of seismic stations surveyed and title deeds acquired.
xv. Computers, Software and accessories procured.
xvi. Deep subsurface geothermal exploration equipment and laboratory consumables procured
xvii. Office furniture and fume cupboards procured for geothermal Unit

Financial Performance

Figure 7.14 shows that approved GoU development budget for the project is Ug shs 3.297 billion of which 48% was released. This was excellent release performance from MFPED. Expenditure performance was very good at 74% of the released funds. Majority of expenditures were on activities relating to Purchase of Specialized Machinery & Equipment (61%), Mineral Exploration, development, production and value-addition promoted (18%), Purchase of Office and ICT Equipment, including Software (6%). Other outputs took up between 4% and 1% of the expenditures.

Figure 7.14: Financial performance for the Project: 1199



Source: IFMS

Physical performance

By the end of 31st, December 2014, only surface mapping was ongoing. The subsurface mapping had not commenced due to absence of the Electromagnetics (TEM), Magneto-tellurics (MT) equipment. The different administrative reviews affected the procurement of the equipment, which started in FY2013/14. The reviews took about 12 months before the fresh commencement of the procurement process. This affected completion and delivery of the equipment. The gravity meters and other equipment were delivered in December 2014.

By the end of December 2014, the project coordinator submitted the list of the department structure to the Permanent Secretary Ministry of energy for approval. Once approved then a Geothermal resources department will be established. The project is currently engaged in awareness creation in preparation for the establishment of the policy and regulation. Table 7.19 presents a summary of half-year performance against the annual planned outputs.

Table 7.19 Annual planned outputs against physical performance by January 14th, 2015

Annual Planned output	Physical performance up to December,2014
Policy Formulation And Regulation International partnership for geothermal technology (to provide framework for international cooperation in geothermal technology, policy and model development) developed. Consistent, effective and efficient regulatory framework for geothermal energy developed.	Climate Technology Center and Network (CTCN), an operational arm of the United Nations Framework Conventional for Climate Change (UNFCCC) technology Mechanism expressed interest in supporting Uganda formulate a geothermal energy policy, legal and regulatory framework. The CTCN has been working with staff of the project to prepare application documents which were submitted the National Designated Focal Point Person, Dr. Maxwell Otim Onapa, Deputy Executive Secretary, Uganda National Council of Science and Technology (UNCST) for onward submission to CTCN. Staff of the Project continued identifying key *implementation issues* and challenges to geothermal development which included; lack of an attractive investment environment, lack of skilled geothermal workforce, resource identification and characterization (accurate and reliable information on geothermal resources in Uganda), economics, financial risk, development risks (for instance proving the resource, drilling), competition from other forms of energy like hydro power. Others included, environmental misconceptions, sitting and permitting delays, transactional costs like high capital costs, transmission capacity (power) or market penetration (direct use) local population concerns, public / community perceptions and support, lack of knowledge of the benefits of development and utilization, lack of a consistent, effective and efficient regulatory framework for the geothermal energy, and technical and market barriers. The staffs of the project are identifying key stakeholders as a policy formulation process. Terms of References (ToRs) for procuring consultancy on formulation of geothermal energy policy were drafted. Staff of the project have been involved in preparation of a Workshop on the formulation of an 'East African Geothermal Code of Conduct" to be held in Entebbe, Uganda from 10th to 12th February 2015 From 6th to 7th November, Mr. Vincent Kato attended Mining Policy review

Annual Planned output	Physical performance up to December,2014
	workshop in Munyonyo, Kampala. Lack of information and awareness is a barrier to geothermal development in Uganda. In order to mitigate this barrier, staff of project disseminates information to both government and private sector. Staff of DGSM was taken on an information and awareness field trip to Buranga and Katwe. Geothermal brochures were also produced and these are routinely given out. A report produced by R. Gordon Bloomquist, a Geothermal Specialist, and Washington State University Energy Program (Retired) titled Recommendations for Geothermal Resource Development was received by PC/Geothermal from United States Agency for International Development (USAID). It was prepared for review by USAID – African Infrastructure Program (AIP). The report gives recommendations to be considered in formulation of geothermal policy. The report provides suggestions as to ways to mobilize the private sector to join efforts with the governments of the region and provide the technical and managerial know-how as well as capital resources to develop the region's substantial geothermal endowment. Power Africa has expressed interest to support Uganda in developing its Policy, Legal and Regulatory framework subject to Uganda's submitting high level written request for technical assistance to USAID Mission Director and to Power Africa Coordinator. The Project Coordinator /Geothermal attended the Energy Policy review symposium on 3rd October 2014. African Union Commission (AUC) and German Geological Survey (BGR) were organizing a follow-up workshop on geothermal rules, Code of practice, regulations and guidelines to be held in Uganda. The purpose of the follow-up workshop was to conclude what was presented and discussed in Naivasha: Based on the updated 2014 New Zealand Geothermal Rules and Regulations. Hagen Hole and Getahun Demissie would write Guidelines / Rules and Regulations that fit the conditions of all GRMF-countries. They will present and discuss their work in Kampala and amend the inputs from the participants (ideally the same as in Naivasha). The AUC-BGR would then publish these Rules and Regulations for Eastern Africa and would attach them to all future GRMF-grants
All the Land with Geothermal resources surveyed and gazetted for geothermal development. All the land of seismic stations surveyed and title deeds acquired. Data acquisition and management:	From 7th to 9th October 2014, three senior officers undertook a reconnaissance survey around Eregu (Amuru), Amuru (Nwoya) and Amuru (Amuru). Geological studies revealed thermal springs which are possibly fracture controlled and most likely low temperature resources. These thermal springs are in non-volcanic terrain and are possibly related to deep circulation of meteoric waters along permeable fractures. A report "Preliminary survey of Elegu and Amuru thermal springs in Northern Uganda" was produced. From 13th to 22nd November 2014, four officers undertook regional geological studies in Kaiso-Tonya area. Surface indicators of geothermal activity were discovered which included diatomite and travertine deposits. This area has high geothermal gradient which is supported by high bottom hole temperatures from oil wells. From 1st to 15th December 2014, two officers undertook regional geological studies between Butiaba and Wanseko. The area has surface indicators of

Annual Planned output	Physical performance up to December,2014
Accurate and reliable information on geothermal resources in Uganda acquired.	geothermal activity and this draws well with observation from oil wells indicating high geothermal gradient in this area (67^{O}c/km). From 8^{th} to 20^{th} December 2014, two officers undertook geochemical studies on thermal springs in Kaberebere (Mbarara), Dura (Kamwenge), Nyakalenjijjo (Kasese) and Volcanic craters around Fort Portal. Samples are yet to be analyzed. Surface indicators of geothermal activity were noticed in Fort Portal Volcanic which merits further studies. From 8^{th} to 20^{th} December 2014, two officers undertook geological studies in Kaberebere (Mbarara), Dura (Kamwenge), Nyakalenjijjo (Kasese) and Volcanic craters around Fort Portal. Surface indicators of geothermal activity were noticed in Fort Portal Volcanics which merits further studies. From 15^{th} to 18^{th} December 2014, two senior officers undertook a reconnaissance survey at Amuru Pakele (Adjumani) and Kanangarok (Kaabong). Both geothermal systems were in non-volcanic terrain possibly related to deep circulation of meteoric water along highly permeable faults and fractures. Silica sinters at Kanangarok if related to geothermal system may indicate high temperature of possibly over 200^{o}C. Mr. Vincent Kato undertook a study on potential direct use application of Uganda's geothermal resources and produced two reports "Utilization potential of Uganda's Geothermal Energy Resources" and "Potential Direct application of Uganda's geothermal Resources". Geraldine Paula Babirye produced DEM, Total Magnetic Intensity, Analytical signal map, lineament, geology maps of northern Uganda targeting areas with geothermal resources. Staff of the project developed Terms of Reference (ToRs) which will act as basis for Geothermal Development Company of Kenya to implement the MoU signed between Uganda and Kenya. A Project Proposal "Pre-Feasibility studies at Katwe and Kibiro Geothermal Resources Prospects for geothermal energy production" was prepared for submission to Global Environmental Facility (GEF). Uganda was allocated US$3.77 Million under climate change. Geological Mapping: Project Team Members continued working on data collected from Rubaare Geothermal Area (Ntungamo), Butiaba-Wanseko area and North (Buliisa), North Eastern Geothermal Areas (Amuru, Adjumani, Nwoya and Kaabong). This involved mapping surface geology, alteration and hydrologic features. All mapped geothermal system are Convective fracture controlled geothermal systems where by permeability is controlled by fracture systems in tectonically active areas. Fluid flow within these geothermal systems is presumed to be controlled by vertical faults and fractures. Structural control of these geothermal systems was investigated as well as determining fault distributions in these areas. Reconnaissance Survey Drilling for water in Elegu, Amuru District encountered hot water. This immediately spurred project team to go and investigated the occurrence of hot water in the area as part of national and regional assessment. Upon

Annual Planned output	Physical performance up to December,2014
	reaching Elegu, Atiak Sub-county in Amuru District, it was found out that most borehole water is warm and mineralized (personal communication). At Elegu Police post borehole water had a temperature of 35.7^{o}C (0396814E, 0394080N). Another borehole (0396778E, 0394106N) had a temperature of 40^{o}C, and another had 37^{o}C (0396736E, 0394195N). These warm mineralized springs are surface indicators of geothermal activity. DEM maps as well as geology maps have been prepared. These thermal springs are going to be overlaid to aid in structural mapping of this area. This area might be related to Amuru thermal springs in Nwoya (0376830E, 0309145N) discharging at 48^{o}C and Amuru thermal spring in Amuru (0377363E, 0309659N) discharging at 46^{o}C. This area warrant future further investigations. Geophysical Survey Project Team members undertook magnetic survey in Panyimur area to confirm interpreted anomalies from airborne magnetic interpretation. A report was submitted but data will be integrated with MT/TEM results to be conducted soon. Seismic Profiles As part of the exploration activities, the geophysics section is working with geophysicist from PEPD to generate sections near the geothermal resources areas to locate deep reaching vertical fractures presumed to control geothermal fluids flow.
Buildings and laboratories and improvement of Security at the gates of Geological Survey and Mines renovated	Renovations had not commenced by the end of December,2014
Office furniture and fume cupboards procured for geothermal Unit	Ten glass shelves were procured for staff of the project.
Purchase of specialized equipment	Ms Labx Scientific Systems supplied LOT 7 items which included water proof field books, geology field book covers, water proof pens, marker pens, pencils, aluminum clip boards, Geo Belt pack, Gfeller leather field case, Geo Rock bag, high visibility safety polo, water proof back packs, multi-purpose mapping coats, comprehensive first aid kits, sack-bag, safety goggles, LOT 8 included geological software, digital camera, field tough books Labx Scientific Systems delivered the following items of lot 8; Geological software, Digital camera / camcorder, Field laptops / Tough book. Labx Scientific Systems delivered the following items of lot 6; Geological hammers, hand lenses, compasses, clinometers, magnetic susceptibility meters, advanced weather station, petrological microscope, polarized

Annual Planned output	Physical performance up to December,2014
	microscope, binoculars, GPS, multi-parameter meter, Niton analyzer, digital mapping system, DGPS, portable mercury meter, portable gas analyzer, plastic bottles, mechanical auger, Benefit Worldwide has delivered the CG-5 Gravity Meter. Palin Corporation has delivered the following items; Analytical balance, Digital thermometers, Multi-meter, filtration membrane, nitric acid, sample bottles.
Health And Safety Three training and awareness campaign in safety issues during geothermal Exploration to safeguard the health and safety of staff. undertaken Personal Protection Equipment and Comprehensive First Aid Kits procured	Health and safety equipment and health and safety facilities were procured for field team members. Personnel Protective Equipment (PPE) was also procured for field teams. These included safety shoes, reflector jackets, goggles, rain coats, whistles. Training material was organized for training in First Aid application, Health and safety in geothermal environments. Copies of first aid manual 2013 were produced to be distributed to project staff.
Licensing And Inspection Administrative reviews for compliance and geothermal inspections and monitoring undertaken. New investors licensed	*Ms Pawakom International Limited* submitted progress report for work done on preliminary interpretation of seismic reflection profiles. They interpreted their geological model to be fracture controlled geothermal system along rift major boundary faults. The *AAE Systems Inc* was awarded a Geothermal Exploration License in Katwe volcanic field. Inspection was carried out in Buranga, Katwe, and Panyimur, Amuru (Nwoya and Amuru) geothermal resource areas.
Geothermal energy promotion carried out	On June 30, 2013 in Cape Town, South Africa, President Obama announced Power Africa — an initiative to double the number of people with access to power in Sub-Saharan Africa. Power Africa aims to achieve this goal by unlocking the substantial wind, solar, hydropower, natural gas, and geothermal resources in the region to enhance energy security, decrease poverty, and advance economic growth. On 26th September to 4th October 2014 Vincent Kato (PC/Geothermal) attended a Power Africa – African Union Commission Geothermal Road Show. In this show investment opportunities and incentives in Uganda were showcased as well as geothermal energy potential. Special Private Meetings were arranged with US Geothermal Investors as well as manufacturers. Delegates visited geothermal power plants, manufacturers of thermal units as well as financiers. On 4th September 2014, Project Coordinator/Geothermal (PC Geothermal) gave a lecture on Uganda's geothermal energy potential at African Center for Media Excellence, Bunga. From 8th to 13th September 2014, PC/Geothermal, Jacqueline Nnakirijja. One Geologist and an IT Specialist participated in the Energy Week

Annual Planned output	Physical performance up to December,2014
	organized by MEMD and GIZ at Lugogo, Forest Mall. The team showcased Uganda's geothermal potential, its uses and created geothermal energy awareness. The PC Geothermal attended a mandatory pre-bidding workshop for short listed bidders for Geothermal Risk Mitigation Facility –Second Application Round in Addis Ababa, Ethiopia. Uganda submitted Expression of Interest (EoI) for surface studies for Katwe, Buranga, Kibiro and Panyimur prospects to the Geothermal Risk Mitigation Facility. This EoI achieved the required number of points to pass the pre-qualification stage for financing support for eligible surface studies activities by GRMF. Correspondingly Uganda was invited for a mandatory pre-bidding workshop from 15th to 16th July 2014. On 12th September, the Project Coordinator Geothermal submitted completed GRMF application forms. From 8th to 14th July 2014, PC/Geothermal, together with 17 staff of Sector Planning Unit of MEMD undertook a field tour to the following geothermal resource sites; Kitagata, Sheema district, Rubaare, Ntungamo district; Ihimbo and Menera, Rukungiri district; Karungu and Bubare, Kabale district - The field tour was intended to monitor geothermal activities as well as enhance governmental knowledge about geothermal energy. Two thousand geothermal energy brochures and ten T-Shirts were procured for promotional purposes. A total of 100 copies of DVD Geothermal Energy World (Iceland, Kenya, and El Salvador) were produced for distribution. A total of 100 copies of DVD Rise of Menengai were also produced to create awareness. Copy of the Book "Geothermal Basics" Questions and Answers was produced for distribution to public as a way of creating awareness about geothermal energy. On 20th to 21st September support staff of DGSM undertook an awareness and information tour of geothermal resources sites in Bundibugyo and Kasese District. General geothermal information and investment opportunities were dispatched to GRMF-African Union Commission for use in attracting investors in geothermal industry. On 4th September 2014, PC/Geothermal had a meeting with a meeting with John L. Garrison (Energy Advisor – USAID Africa Bureau) and Jay Dick, a geothermal energy advisor for Power Africa to discuss issues on geothermal industry in Uganda.
Capacity Building and Human Capital Development achieved	On 17th October 2014, the project acting commissioner attended a World Bank II and III wrap up meeting which was also preparing ERT III where a Geothermal Energy component was included. From 20th to 24th October 2014, staff of the project had a non-residential retreat to Eco Resort Kasenyi to fill the Geothermal Risk Mitigation Fund (GRMF) application forms. On 18th November 2014, staff of the project attended a meeting preparing for the Western Rift valley workshop that was to be held in the first week of March 2014, in Kigali, Rwanda. On 11th November 2014, PC/Geothermal met a delegation from Tsuto

Annual Planned output	Physical performance up to December,2014
	Toyota from Japan who is interested in investing in geothermal energy in Uganda. On 13th to 14th November 2014, staff of the project attended a Joint Sector Review workshop in Munyonyo. From 13th to 16th November 2014, Mr. Dick Jay, Regional Geothermal Advisor, Power Africa visited Uganda and made a reconnaissance field trip to Buranga and Katwe Geothermal areas. Environmental baseline survey was undertaken at Gudda the proposed site for the Geothermal Resources Department. A report by USAID "Multi Donor Strategy for Geothermal Development In east Africa" was received for review. On 18th November 2014, Vincent Kato visited KenGen Laboratories (Geophysics, Geology and Geochemistry) to benchmark equipment and best practices from KenGen experience in the geothermal industry. As part of institutional strengthening, staffs of the project are working with ARGeo-UNEP on a business, skills gap and *training needs analysis* for the region. Business and training needs analysis would enable governments in the region to establish a sustainable training system and focus on business development and training to achieve these goals in a sustainable way. The training system established would be run and maintained by local geoscientist and human resource personnel, often building on local structure. On 21st August 2014, a total of 7 commissioners and senior officers visited UNEP offices in Nairobi. The team was received by Dr. Meseret (UNEP Regional Office Manager) who briefed the team about Kibiro Geothermal project to be implemented from October 2014. She also informed members that UNEP is willing to sponsor six Ugandans to attend the ARGeo-C5 conference in Arusha, Tanzania. She also informed the Team that Uganda is eligible to apply for GEF funds. From 1st to 4th July, the PC/Geothermal attended 6th Northern Corridor Infrastructure Regional Integration Summit in Kigali, Rwanda. It was recommended that implementation of Memorandum of Understanding signed by Heads of State of Uganda, Kenya and Rwanda to develop geothermal in the regional need to be fast tracked and registered progress before the next summit (October 2014) in Kampala. From 17th to 21st August 2014, a total of eight commissioners and senior officers traveled to Kenya to Kick Start implementation of MoU signed by Heads Of state of Uganda, Kenya and Rwanda. The group drafted Terms of Reference which have been approved by PS/MEMD. The group also took a field guided tour of Menegai geothermal field as well Geothermal Development Company's facility at Nakuru. East African Geothermal Partnership Training Modules including Teaching Material and Presentations were received from USAID. On 7th August 2014, two senior officers attended a Power Africa Geothermal Stakeholders meeting for Uganda, at Serena Hotel, Kampala. Officers underwent on-the-job training in geothermal technical skills at African Center of Geothermal Excellence in Nakuru, Nairobi. Establishment

Annual Planned output	Physical performance up to December,2014
	of Geothermal Center of Excellence is part of the Northern Corridor Regional Integration Projects. From 25th to 29th August 2014, an officer attended a short course in Data Base Management Skills Improvement at UMI. From 25th August to 5th September 2014, an officer attended a short course in Human Resource Management and Administration for Mineral Sector Development at Swaziland Development Training International. From 21st September 2014, a total of 6 senior officers are undergoing on-the-job training in geothermal skills at GDC geothermal center of excellence facility at Nakuru, Kenya. From 26th June to 12th July, two project officers attended a course enhancing of the Planning Capacity of Geothermal Power Development at Fukuoka, Japan. Uganda has been invited for short course IX on Exploration for geothermal resources organized by UNU-GTP, KenGen, GDC in Naivasha Kenya. Sudan Two officers left to attend the course in October 2014. Six officers from Uganda have been invited to attend a short course during ARGeo-C5 Conference in Arusha Tanzania in October 2014 on Geothermal Exploration and modeling.. They are sponsored by UNEP.

Source: MEMD

Analysis

Link between financial and physical performance

Expenditure performance was very good at 74% for the 50% average physical progress. This represents a weak link. The poor link is attribute to administrative reviews which affected the procurement process for the specialized equipment.

Achievement of targets

The project performance was fair. Effort was made to implement all the planned outputs by the end of first half of the FY2014/15. Surveys, data acquisition, and interpretation progressed well. The International partnership for geothermal technology was also pursued with the different international organizations like Climate Technology Center and Network and UNEP. Some equipment had been delivered although the key equipment had not been delivered as its procurement was affected by the various administrative reviews.

Conclusion

There is potential for geothermal resources in Uganda as an alternative source of energy. Effort had been made on all the planned outputs by the end of half year. Data was acquired, international partnerships were pursued, and sensitization of the community was also carried out. The AAE Systems Inc was awarded a Geothermal Exploration License in Katwe volcanic field among others. The key challenge to project implementation was delays in the procurement of the Electromagnetics (TEM), Magneto-tellurics (MT) equipment which is supposed to be used for the subsurface data acquisition and detailed study of the sites. This was due to the numerous administrative reviews for the procurement.

Recommendations

- Department of Geological surveys and Mines department together with the MEMD contracts committee should always execute due diligence to minimize cases of administrative reviews in procurement of key equipment.

7.2.12 Project 1200: Airborne Geophysical Survey and Geological Mapping of Karamoja

Background

Government has recently accomplished extensive acquisition, processing and interpretation of airborne geophysical data (magnetic, radiometric and selected electromagnetic). Findings indicated coverage of 80% the country. Airborne surveys were followed by ground geological and geochemical mapping country wide. A rising out of the surveys carried out, government has been able to focus investors in the mineral sector to target and quantify commercial mineral deposits. For example, four (4) mineral commodities, namely iron ore, gold, vermiculite, and limestone have been explored in sufficient detail and as a result, there has been a significant increase in the mineral resources base in the country.

Failure to acquire data from the 20% of the country due to insurgency between 2004- 2007 gave birth to the Air borne surveys project for Karamoja. The processes for data acquisition commenced in 2007. During FY2014/15 MEMD planned to carry out airborne surveys, estimated at US$ 15million in Karamoja.

The Objectives of the project include;

a) Carrying out airborne geophysical survey of Karamoja
b) Complete the gap in high quality airborne geophysical data coverage of Uganda
c) Acquire remote Sensing data for Karamoja region to map mineral signatures
d) Map mineral potential of Karamoja
e) Package Karamoja region for mining investment opportunities in Karamoja
f) Update Geophysical map of Uganda for mineral investment promotion
g) Construct and equip Karamoja Office and other Regional Offices
h) Procure exploration equipment for Uranium and other Minerals of economic importance

Expected outputs by the end of the project were;

- Updated geophysical, geochemical, geological and mineral resources maps of Karamoja
- Geophysical maps coverage of mineral potential of Uganda Mineral signature maps of Karamoja completed.
- Regional Office for Karamoja Region and other mining regions established.
- Composite regional gravity and magnetic data and maps for tectonic studies

- New magnetic data on Karamoja to enhance the knowledge of natural resources of Karamoja.
- Radon index for the Karamoja region.
- Structural maps for targets of mineralization and enhance the knowledge of ground water mapping and harvesting.
- Report on targets for follow-up.
- Equivalent Potassium Thorium and Uranium data. Radiometric and magnetic data for publication.
- Mineral investment packages on Karamoja to increase employment opportunities and poverty reduction in the region.
- Existing geological information reviewed
- Geological Maps ,Structural maps derived from Remote Sensing data, Geochemical maps, Ground geophysical maps, Mineral potential targets,
- Increase in NTR from regular inspection of mining operations
- Trained human resource,
- Associations of Artisanal and Small Scale Miners (ASM) formed,
- A regional office in Moroto established

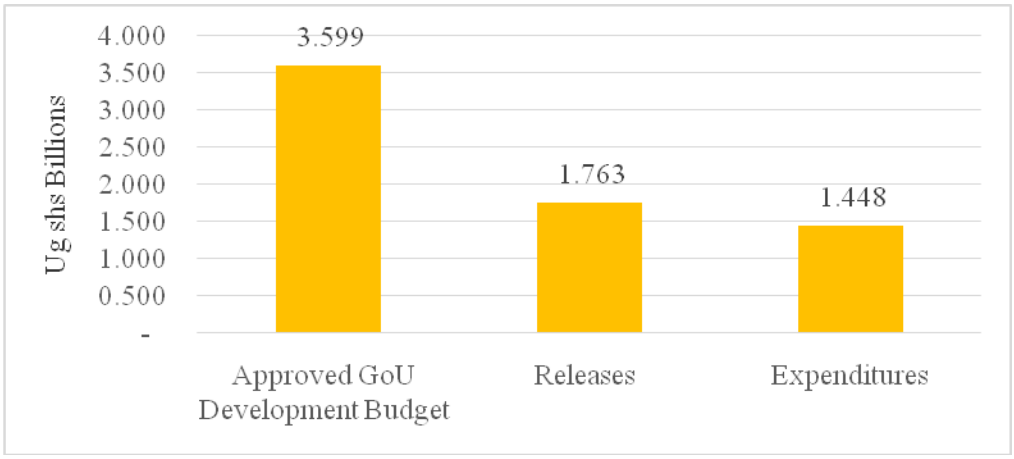
Annual planned outputs for FY2014/15 included;

- Institutional capacity developed
- Office and Residential furniture and fittings procured.
- Specialized equipment procured and installed
- Office and ICT Equipment including software procured
- Construct and equip a regional minerals office for Karamoja region constructed and equipped; a training centre for ASM in Moroto established
- Establish the Mineral Wealth of Karamoja established: Airborne Geophysical surveys of Karamoja carried out(15 million US$ equivalent to Ug shs 40 billion)
- Geological Information, remote sensing, geological mapping, geochemical surveys, follow up ground geophysical surveys and mineral resources assessment.
- Licensing and inspections made

Financial performance

Figure 7.15 shows the financial performance of Project 1200. The GoU approved development budget for the Airborne Geophysical Survey and Geological Mapping of Karamoja project for FY2014/15 is Ug shs 3.599 billion of which 49% of the budget was released by the end of Q2. This represents excellent release performance from MFPED. Expenditure performance for the half-year release was excellent at 82%. Majority of expenditures (60%) were on the two outputs of purchase of specialized machinery and equipment, and Mineral exploration, development, production and value addition promoted. Other expenditure distribution by output was 15% on Government Buildings and service delivery infrastructure, 7% on Policy formulation and regulation, 7% on health safety, and social awareness of miners while the other outputs shared the 11%.

: 7.15: Financial performance for the Project 1200



Source: IFMS Data

The largest expenditures by line item were on activities relating to the purchase of machinery and equipment (25%). The other expenditures were travel inland(18%), other fixed assets(13%), fuel, lubricants and oils(5%), contract staff salaries (4%), monitoring, supervision and appraisal of capital works(4%), other utilities including fuel, gas(4%). The other line items took up between 3% and 0% of the expenditures for the project.

Physical performance

By the 31st December 2014, the air borne geophysical surveys had not commenced due to absence of funding for the operations. Zhongmei Engineering Group Limited, a Chinese company showed interest in the airborne geophysical surveys of Karamoja. The company highlighted that they would easily mobilize financing. Information regarding specifications of the surveys was provided.

Other activities were well implemented. For instance, capacity building continued, sensitization workshops, initiated procurement for the equipment. There were however, delays in the management of the procurement process, which affect implementation of project activities. Land had been earmarked for the construction of the regional offices in Karamoja and processes to have the design drawings made were under way by the MoWT. Table 7.20 below presents the summary performance of the project.

Table 7.20: Annual planned outputs against level of achievement by end of December 2014

Annual Planned outputs	Level of achievement by 31st December 2014
Institutional capacity developed	Training of staff continued: in the fields of MBA, Diploma in Records and Information Management - Diploma in Business Administration and certificates

	in relevant fields Preparations for internal training in sustainable management of mineral resources and value addition were undertaken in financial records and accountability
Office and Residential furniture and fittings procured.	Initiations of the procurement process had just been made.
Specialized equipment procured and installed	The project initiated the procurement of tools and equipment to enable data collection, processing, and analysis of geological and mineral information. Delivery of the equipment is expected in the second half of the year.
Office and ICT Equipment including software procured	Procurement for the equipment was underway. Initiations had just been made.
Seismological network Maintained.	Servicing of Seismological Stations have been undertaken at Kyahi in Mbarara, Kilembe in Kasese, Hoima and inspection of the fencing at Nakawuka and Mubende Stations Two (2) monthly routine service visits to Kyahi-Mbarara (MBAR) seismic station were carried out on 15th November and 20th December 2014. The main purpose of the visits is to make backup iso-images of the seismic data that are recorded and automatically archived at this station. These backed up images of data can be requested by UCSD-IDA in California at any time when it is found out that there is some missing segments in their online data archive. During the same reporting period Kilembe (KILD) and Hoima (HOID) seismic stations continued to send data to seismic data collection and analysis center at Department Headquarters in Entebbe. The unit staff continued to request and retrieve raw waveform data (seed files) for MBAR station from IRIS online database, and extraction of seismic event time segments, database auto registration and phase picking using SEISAN earthquake analysis software in preparation for the ESARSWG earthquake bulletin compilation workshop planned to be hosted in Entebbe in November 2014. The seismological unit successfully prepared and hosted the Eastern and Southern Africa Region Seismology Working Group (ESARSWG) earthquake bulletin compilation workshop from 17th to 22nd November 2014. This is a forum where members in the field of earthquake monitoring from countries which share the East African Rift System (EARS) regularly meet with their country's analyzed dataset and compile a regional earthquake bulletin. During same workshop earthquake catalogs since ESARSWG inception were also reviewed and refined
A regional minerals office for Karamoja region constructed	Land measuring 4 acres near the Catholic Mission in Moroto Municipality was acquired for the construction of Karamoja Regional Office Block. Civil

and equipped; a training centre for ASM in Moroto established	Engineers from the MoWT visited the site for inspections to advice on the architectural designs and bill of quantities (BoQs) during July 2014. The Deed Plan for the land was made and given to the Officials from the MoWT Information on staffing level and equipment for the Karamoja Office was compiled and provided to the MoWT to develop architectural designs and bill of quantities (BoQs) for Karamoja Regional Office.
Mineral Wealth of Karamoja established: Airborne Geophysical surveys of Karamoja carried out(15 million US$ equivalent to Ug shs 40 billion) Geological Information, remote sensing, geological mapping, geochemical surveys, follow up ground geophysical surveys and mineral resources assessment.	Air borne geophysical surveys had not been implemented by the end of half year due to lack of the required Ug shs 40 billion. Other activities however were executed as detailed below. Review of activities of exploration and mining companies in Karamoja was carried out to compile geological data acquired. Reports and maps from Kotido were reviewed in preparation for the field geological mapping. 38 stream sediment samples and five (5) rock samples collected from 25/3 have already been prepared for analysis. Five heavy mineral concentrates were panned and gold specks were recovered in samples taken from Kadipa Village, UTM coordinates 599930mE, 279640mN. Up to six (6) specks of gold were recovered. Geological mapping and mineral resources assessment of map sheets 26/1 and 2 were completed and draft reports produced were being reviewed. Preparations for field geological mapping of map sheets 26/3 & 4 were done. Information on geological and mineral resources of Karamoja, was provided to four (4) individuals. Samples of rubies from Karamoja were also submitted for identification by the Karamoja Mining Association. Information regarding specifications of the airborne geophysical surveys of Karamoja was provided to Precision Geo-Surveys, a company interested in the surveys. The company presented their capabilities, experiences, and technical proposals. The funds for the surveys have not been identified. Review of activities of exploration and mining companies in Karamoja were carried out to compile geological data acquired. Exploration licenses from Sheets 26/1 and 2 in Kotido were reviewed in preparation for the field geological mapping. Preparations for geochemical surveys in sheet 25/4 commenced. Geochemical samples from sheet 25/2 and 3 were also prepared for analysis. Geological mapping and mineral resources assessment of map sheets 17/3 & 4 were completed and draft reports produced and are being edited. Field mapping of map sheets 17/1 and 2 were completed and draft reports produced and were being edited. The requests for geological information on marble, gemstones and gold resources in Karamoja, were provided to investors. Meeting with Chinese delegation composed of multi-sectoral investors interested in infrastructure development, Energy, Oil and Gas Sectors, Agriculture and Mining were held on 29th July, 2014. The investors showed interest in marble in Karamoja for setting up Cement Factory. Funding of the planned airborne geophysical surveys of Karamoja was discussed with possibilities for financing remaining open. Zhongmei Engineering Group Limited, a Chinese company showed interest in the airborne geophysical surveys of Karamoja indicating that financing could be

	easily mobilized by their Company. Information regarding specifications of the surveys was provided.
Licensing and inspections	There remains steady demand for concessions in Karamoja Region with a number of companies reporting the region as area of interest. Field monitoring and inspections of exploration and mining activities are under way in Amudat and Nakapiripirit Districts in the south; and Kotido and Kaboong districts in the north. Over 97% of Karamoja is now under license
Policy Regulation and sensitization (a) Local Government (LG) Officials trained on Mineral Policy, Regulations and Laws; (b) 200 copies of the Mineral Policy, 2001; the Mining Law, 2003; and the Mining Regulations 2004 disseminated; (c) Review the mining laws and regulations reviewed; (d) Investment in mineral sector promoted; e) Training of staff, formalization of artisanal and small-scale miners, and facilitation of laboratories for sample analysis**.**	A two- day workshop on National Land Policy Implementation, Extractives and Community Livelihoods was held in Gulu Municipality and attended by two officials from the Department of Geological Survey and Mines representing the Mining Sector to discuss land conflicts in Karamoja and Northern Uganda in general during November 30th to 2nd December, 2014. Presentation on Mineral Resources of Uganda was made by Gabriel Data (PC/ Karamoja), while Mr. John Kenedy Okewling made a comprehensive presentation on the Mining Legislation, Licensing and Administration of the Mining Policy. 60 copies of the Mineral Policy, 2001, the Mining Act, 2003 and the Mining Regulations 2004 were disseminated to participants. Issues raised included: royalty shares and payments, land, environment, licensing, livelihood of communities living in mining areas, transparency and accountability, involvement of communities, compliancy by mining companies, corporate social responsibilities among others. Other sectors that participated in the meeting include: Local Government and Community representatives, Oil and Gas, NGOs and Elders from the region. Project Implementation meeting was held with technical personnel to discuss progress and challenges on 12th November, 2014. Training and sensitization of Local Government Officials and small scale miners from Morulem, Abim District continued in preparation for the formalization of ASM in Morulem Alluvium prospect. Multi-Stakeholders meeting code-named Karamoja Integrated Development Programme- Policy Committee Meeting was held on 7th July, 2014 in Moroto Municipal Hall to present and discuss sector achievements and challenges. The Meeting was chaired by Her Excellency the First lady where the Hon. Minister of State (MP) Peter Lokeris presented the Mineral Sector activity report. The Ministry of Energy and Mineral Development was tasked with training and educating communities and Local Governments in mineral resources management. The meeting called for establishment of regional office for Karamoja. Other sectors that participated in the meeting include: Agriculture, Water, Education, Works, Health, Wild Life, Land, Forestry, Defense, Internal Affairs, Gender, NGOs, Local Governments and Community representatives from Karamoja. The MPs, District Leaders and other dignitaries from Karamoja region attended the meeting. Project Coordinator/ Karamoja attended a workshop on the Review of the Mining Policy, Law and Taxation in Speke Resort Hotel, Munyonyo organized by the World Bank from 16th to 17th July, 2014 and issues identified were later shared with stakeholders in Karamoja. Over 50 participants drawn from the Government Departments, Fiscal and Legal Fraternity and the Mining Industry

	Project Implementation meeting was held 22nd July, 2014with technical personnel to discuss progress and challenges of the project A workshop on Mining Interest Group in conjunction with Ecological Christian Organization (ECO) was conducted on 20th August, 2014 to formulate objectives and Terms of References. Presentation on Mineral Sector Activities in Karamoja was made and consultations on the review of Mining Policy and Legislations were held on 21st August, 2014. Issues raised include: royalty shares and payments, land, environment, licensing, livelihood of communities living in mining areas, transparency and accountability, involvement of communities, compliancy by mining companies, corporate social responsibilities among others. Sixty Seven copies of the Mineral Policy, 2001, the Mining Act, 2003 and the Mining Regulations 2004 were disseminated to participants Thirty sets of the Mineral Policy, 2001, the Mining Act, 2003 and the Mining Regulations 2004; the mineral concession map; the concession list; the geology maps in total were delivered to the Offices of the Chief Administrative Officers, Resident District Commissioners and Local Council Chairpersons of all the seven districts of Karamoja namely: Abim, Amudat, Nakapiripirit, Napak, Moroto, Kotido, and Kaabong. Dialogues on Minerals with the theme 'Know Your Rights' were held in Mt. Moroto Hotel in Moroto Municipality and Church Hall in Abim Town on 23rd and 25th September, 2014 respectively. Presentation on Mineral Resources of Karamoja was made by Gabriel Data (PC/ Karamoja, while Mr. John Kenedy Okewling made a comprehensive presentation on the Mining Legislation, Licensing and Administration of the Mining Policy. One hundred copies of the Mineral Policy, 2001, the Mining Act, 2003 and the Mining Regulations 2004 were disseminated to participants. Training and sensitization of Local Government Officials and small scale miners form Amudat, Nakapiripirit, Moroto, Abim, Kotido and Kaabong Districts during August to September, 2014 on airborne geophysical surveys of Karamoja and mining policy and legislation. Radio Talk shows were run on Radio Nenah in Moroto on 20th August and 26th September, 2014 to sensitize the people of Karamoja about their mineral resources and administration of mining. A lot of interest was registered
Inspections carried out; record Mineral statistics, labour, production, income, taxes, livelihood trends; address environmental and social issues in mining operations; b) Training needs of the industry and educate miners on mining health and safety operations	Health and Safety materials extracted from the Handbook on Small Scale Mining and mainstreaming gender and climate change in mining areas were compiled for dissemination to miners Karamoja. Created awareness on Health and Safety issues in Morulem gold working in Abim (ASM) and Rupa gold mining (ASM) in Moroto Progress on the other outputs was to be made in the subsequent quarters.

trends identified; (c) Environmental and social issues in mining operations addressed; (d) Training needs of the Industry identified ; **(e)** Miners educated on mining health and safety operations.	

Source: MEMD; GSMD

Challenges

- Financing of airborne geophysical surveys has not been secured.
- The state of the Karamoja roads during wet season has slowed down the sensitization program.
- Karamoja is hard to reach and to live area, incentives required to keep morale of officers high are limited.
- Mining Laws and regulations pose a challenge even to Karamojong's as they affect their land that they treasure and resource that they consider as their own.
- Administrative reviews exacerbate delays in completion of procurement.

Analysis

Link between financial and physical performance

Expenditure performance for the half-year release was excellent at 82% against an average 50% physical progress. This represents a poor link, as the funds were not commensurate with the physical works. This was due to the procurements that were still ongoing and the equipment had not yet been delivered on site.

Achievement of targets

Performance of the project was fair although the project was behind schedule. The key deliverable of airborne geophysical survey and geological mapping of Karamoja had not commenced due to lack of funding. The procurement process of specialized equipment was at a slow pace and yet these are vital in project. Other planned outputs were rated fair as data continued to be acquired, a number of mining policies and other documents were disseminated, the project continued to build capacity its staff, artisans were trained on health and safety. Issues regarding royalties and other community needs were also established.

Conclusion

The project performance during the half year FY2014/15 was fair. A number of achievements like sensitization of communities, artisans and minors about health and safety, dissemination of the mining policies and other documents were made. Seismological network was also maintained, acquisition of the land for the construction of the offices in Karamoja was also

achieved. The project was majorly affected by the lack of funding totaling to US$15 million to execute the airborne geophysical survey and geological mapping of Karamoja; and delays in the initiation of the procurement process for the required equipment.

Recommendation

- The MEMD should negotiate with the Zhongmei Engineering Group Limited, a Chinese company to form a Public Private Partnership in the airborne geophysical survey and geological mapping of Karamoja
- The MEMD should timely handle procurements to ensure the required equipment are delivered in time.

7.3 Vote 123: Rural Energy Electrification Agency (REA)

Background

The REA was established as a semi-autonomous agency by the MEMD through Statutory Instrument 2001 no. 75. It seeks to operationalize Government's rural electrification function under a public-private partnership. In FY2013/2014, the agency was upgraded to a vote status.

Mandate and Mission

The REA is mandated to facilitate provision of electricity for socio-economic and rural transformation in an equitable and sustainable manner. The medium term goal of REA is to achieve 26% rural electrification by June 2022.

Its mission is "*To facilitate provision of electricity for socio-economic rural transformation in an equitable and sustainable manner*"

The vote has two key projects. These include; West Nile Grid Extension Program- Global Partnerships on Output Based Aid (GPOBA: Project 1261), and Rural Electrification Project (Project 1262). In FY 2014/15, performance of the two projects was reviewed.

Overall Performance

Financial Performance of the Vote

The approved budget for REA in FY2014/15 including donor and GoU is Ug shs 97.38 billion. By the end of December 2014 Ug shs 44.21 billion was released. Detailed financial performance is presented in table 7.21 below.

Table 7.21: approved budget, receipts and expenditure performance for the vote (Ug shs billion)

Source	Budget 2014/15	Receipts July-December, 2014	Actual as a percentage of the Budget (%)	Expenditure / Absorption (Ug shs)	Percentage absorption Expenditure against releases (Ug shs)
GoU Transmission	36	14.7	41	13.22	90

Source	Budget 2014/15	Receipts July-December, 2014	Actual as a percentage of the Budget (%)	Expenditure / Absorption (Ug shs)	Percentage absorption Expenditure against releases (Ug shs)
Levy					
GoU Treasury	16.98	9.32	55	9.31	100
IDA	20.4	11.42	56	5.56	49
NORAD	6.4	5.93	93	5.83	98
BADEA	15.4	2.04	13	2.04	100
Kfw	2.2	0.8	36	0.8	100
TOTAL RECEIPTS	97.38	44.21	45	36.76	83

SOURCE: REA

The low release for BADEA was as a result of donor requirements that changed after contractors had submitted the advance bank guarantees. In the case of KfW, UMEME the main player came on board late, at a slow pace and yet most of the connections were expected to come from UMEME. There was also a problem of lack of connection materials by service providers that further slowed down the connection process.

7.3.1 Project 1261: Global Partnerships on Output Based Aid - Grid Extension Program

Background

Output Based Aid (OBA) is a strategy for explicit performance based subsidies for delivery of basic services such as: connection to electricity, piped water supply and sanitation. The project recognizes why the subsidy is provided, who is receiving the subsidy, what is being subsidized and with how much. The payment of the subsidy is directly linked to the delivery of verified outputs rather than the input.

The GPOBA is a multi-donor trust fund established in January, 2003 by DFID and World Bank. The purpose of GPOBA is to fund, demonstrate and document OBA approaches to support the sustainable delivery of basic services in developing countries.

The objective of the project is to provide improved access to electricity to poor households throughout Uganda. This will be attained by creating an OBA Facility managed by the REA under the MEMD.

Eligible Customers

Under the project, criteria for eligibility for the OBA subsidy are:

- Household location within License Area of the Licensed Distribution Company (LDC), but not in list of excluded urban areas.
- Household application for connection and ability to be serviced by a no pole connection from the nearest distribution line.
- Household's completion of internal wiring at the time of application for a connection or application for a load-limited ready-board solution.
- Household's ability to pay the cost of inspection and the security deposit (for post paid meters only).
- Eligibility of poor households identified by the poverty mapping
- Unconnectivity of a household for at least 18 months after the distribution line was completed

Compliance with the household eligibility criteria was a precondition for subsidy disbursement and was to be verified by an Independent Verification Agent (IVA).

Project financing

With an estimated US$1.5 million allocated to project consultancy, supervision and contingency. The available subsidy funds are US$18million. With this funding and the current average cost of connection, the OBA Project is now targeting about 102,000 low-income Ugandan households (an estimated 510,000 beneficiaries) to electricity grids throughout Uganda, in rural, peri-urban and urban areas. Table 7.22 below summarizes the financiers for the project.

Table 7.22: OBA Budget and financing

Development Partner	Committed funds (US$)[17]	Share of total
GPOBA	5,500,000	28%
EU/KfW	4,937,500	25%
Germany Government/KfW	5,062,500	26%
GOU	4,000,000	21%
Total	19,500,000	100%

Source: Field Findings; REA

Annual Planned outputs for FY2014/15

- 40000 consumer connections made in the country.

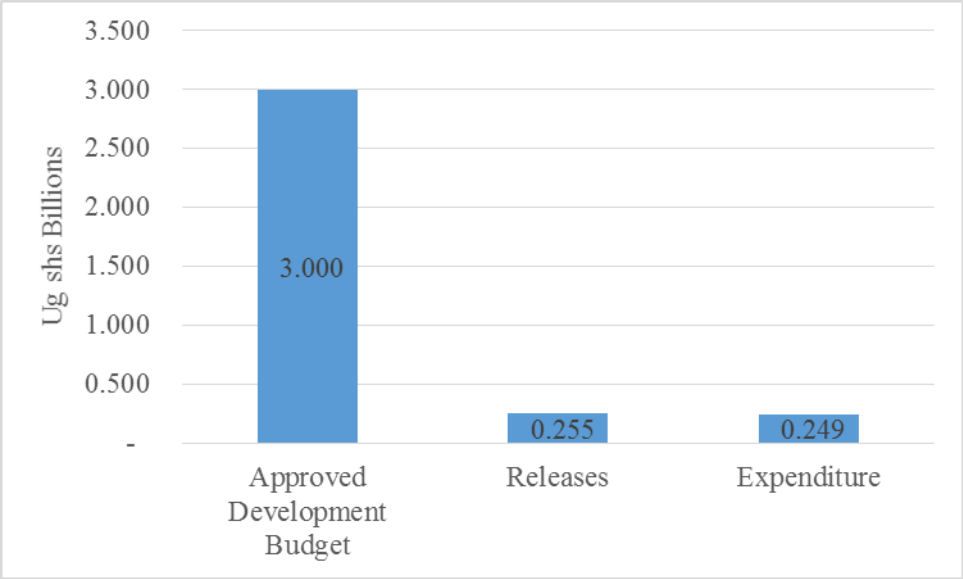
Financial performance

The approved GoU development budget for the project is Ug shs 3 billion of which 8% had been released by the end of December, 2014. Expenditure performance was excellent as 98% of the

[17] Funds converted to at US$

released funds were absorbed. All the expenditures were made on the output of increased rural household connections. This reflects an excellent allocative efficiency for the project. Figure 7.16 shows financial performance for project 1261.

FIGURE.7.16: FINANCIAL PERFORMANCE FOR PROJECT: 1261



SOURCE: IFMS

By the end of December, 2014, disbursements varied from 10% to Zero (see table 7.23). Reimbursements are made to the licensed distribution companies upon completion of the connections and verification by the independent verification company.

TABLE.7.23: FINANCIAL PERFORMANCE OF DONOR AND GOU COUNTERPART FINANCING AS AT DECEMBER, 2014

Development Partners and Currency	Available Funding	Amount Claimed	Amount Disbursed	Percentage Disbursement
GoU (US$)	4,000,000	184,941	148,849	4%
GPOBA/IDA(US$)	5,500,000	-	-	0%
IDA/ERT II (IVA)[US$]	1,106,220	111,273	111,273	10%
German Government/KfW (Euro)	4,050,000	365,819	365,819	9%
EU(Euro)	3,950,000	-	-	0%

Source: REA

Connection works

By the end of December, 2014 the reimbursements from the implementer performed well. Overall performance was excellent, as 80% of the claimed funds had been disbursed as indicated in table 7.24.

TABLE 7. 24: AMOUNT CLAIMED AND PAYMENTS TO THE LDCS

No	Licensed Distribution Companies (LDC)	Amount Claimed	Amount Disbursed	Percentage Disbursement
1	Umeme	0	0	
2	Kilembe Investments Limited (KIL)	320,229,680	274,542,562	86
3	West Nile Rural Electrification Company (WENRCO)	0	0	
4	Ferdsult Engineering Services (FESL)	0	0	
5	Bundibudyo Energy Cooperative Society (BECS)	149,519,216	103,533,833	69
6	Pader – Abim Community Multi-Purpose Electric Cooperative Society Limited (PACMECS)	0	0	
7	Uganda Electricity Distribution Company Limited (UEDCL)	0	0	
Totals		469,748,896	378,076,395	80

Source: Field Findings; REA

Payment to Project Consultants

Table 7.25 shows the disbarments to the project consultants. The Audit firms (KPMG, and Ernest and Young) provide the verification services while Real marketing Limited publicizes the project. By December 2014; 100% of the claimed amounts by the two consultants had been paid. The poverty Mapping Consultancy is to identify eligible households in newly electrified areas that are classified as poor and are hence eligible for a connection subsidy under OBA. Payments to the consultant had not been made by December 2014 as no certificate or claim had been made.

Table.7.25: Disbursements to the Project Consultants

Development Partner and Currency	contract Amount	Amount Claimed	Amount disbursed	Percentage disbursement
KPMG(US$)	737,220	73,722	73,722	10%
Ernst and Young (Ug shs)	957,555,000	95,755,500	95,755,500	10%

Real Marketing Limited(Euro)	646,210	420,000	420,000	65%
Poverty Mapping Consultancy(Euro)	185,248	-	-	0%

Source: REA

Physical performance

By the end of December, 2014 a total of 5,014(13%) of the annual planned connections had been made. Overall the project uptake is still low but with registered positive trend among most distribution companies except Pader – Abim Community Multi-Purpose Electric Cooperative Society Limited (PACMECS), and West Nile Rural Electrification Company (WENRECO).

The key reason noted by PACMECS for the trend was the low distribution of the LV networks. A number of the potential OBA clients were far from the LV network. WENRECO on the other hand noted that a number of households could not easily afford wiring of their houses.

Largely, Household connections were higher in Q2 FY2014/15 compared to the Q1. No connections were registered under UEDCL. The highest number of connections were registered under BECS. By end of December, 2014; UEDCL was procuring connection materials and supply was expected in second half of the FY.

The table 7.26 summarizes performance of the project during the July- December, 2014.

Table.7.26: Annual Planned targets against achieved for July- December, 2014

Licensed Distribution Companies (LDC)	No. of connections planned for FY2014/15	No. of Connections Q1	No. of connections Q2	Total connections half year	Percentage Half Year achievement
Umeme	25,500	675	1,146	1,821	7
Kilembe Investments Limited (KIL)	4,000	485	686	1,171	29
West Nile Rural Electrification Company (WENRCO)	1,200	240	162	402	34
Ferdsult Engineering Services (FESL)	1,150	176	299	475	41
Bundibudyo Energy Cooperative Society (BECS)	2,275	530	566	1,096	48
Pader – Abim Community Multi-Purpose Electric Cooperative Society Limited (PACMECS)	310	45	4	49	16

Licensed Distribution Companies (LDC)	No. of connections planned for FY2014/15	No. of Connections Q1	No. of connections Q2	Total connections half year	Percentage Half Year achievement
Uganda Electricity Distribution Company Limited (UEDCL)	3,200	-	-	0	0
TOTAL	37,635	2,151	2,863	5,014	13

Source: REA

Field Findings

(i) Pader – Abim Community Multi-Purpose Electric Cooperative Society Limited (PACMECS)

Background

The vision of the cooperative is ‘‘*A sustainable electric cooperative society providing affordable energy power to empower rural and urban communities in Northern Uganda”*. The specific objectives of the cooperative include:

- To distribute and manage electric power to the communities
- To recruit and retain qualified personnel
- To contribute to social and economic empowerment of the people of northern

The cooperative started in 2008 and by the end of December, 2014 had membership of 1500 members. Requirements for joining the society were:

- Membership fee is Ug shs 10,000
- Purchase two shares each of 50,000

The LDC serves the districts of Abim, Lamwo, Agago and Pader. The project activities started in 2013. The Abim and Pader districts OBA connections were reviewed.

Findings

By the end of December, 2014 a total 127 out of the planned 310 connections had been completed of which 49 had been verified by REA. The claim for the 127 connections worth Ug shs 60,000,000 was submitted in August, 2014. The verification team visited the connections in November 2014 and PACMECS was awaiting payments.

The requirements for connections included:

(i) Premises located in less or equal to 35 meters from the LV network
(ii) Existence of the line for at least 18 months
(iii) Contribution of Ug shs 20,000 inspection fee
(iv) Pass port photographs
(v) A filled application form
(vi) Completed agreement form to supply electricity
(vii) Certificate of completion for wiring from a certified electrician

(viii) Letter from the Local council chair person

The cost per connection was at Ug shs 485,452. The PACMECS noted that response rate was fair. The slow connections were attributed to the

- Delayed payments for the connections that had been completed. This affected their financial cash flows to purchase the materials that had got exhausted.
- The distribution of the LV network that currently only along the main road affected connectivity as the potential clients are in the areas without the network.

In terms of publicity and awareness of the project, PACMECS noted that the marketing consultant visited **Pader for hardly ten minutes.** Only a banner was put up and the staff immediately left. The LDC was dissatisfied with the quality of marketing they exhibited in Pader.

During the Half year monitoring, beneficiaries from both Abim and Pader local governments were interviewed to ascertain the status of the connections and also ascertain clients' satisfaction.

A summary for the two districts is presented in the text box. 7.5

BoX.7.5: Beneficiaries Satisfaction for Abim and Pader Districts

Abim Local government

Beneficiaries from New corner North, East and West wards in Abim town council were interviewed. The connections had been made between March and December 2014. The beneficiaries were members of PACMECS. The beneficiaries were very satisfied with the intervention. The grid connections led to a number of benefits which included:

- Start-up of businesses: *Ocheng Walter started a fabrication of doors and windows business, which provides him income.*
- Improved security and lighting
- Ability to operate bars, restaurants and retail other shops which can operate up to eight hours conveniently

The beneficiaries noted that whereas they spend more money on energy than before the associated benefits were worth.

The key challenges mentioned were:

- Increased demand for the connections which PACMECS was not meeting due to lack of connection materials
- Limited coverage of the LV network limiting would be beneficiaries from accessing free connections.
- Few vending points for purchasing units of electricity.

The beneficiaries recommended that:

a) The PACMECS should obtain more materials so that all eligible clients can be served
b) The REA should increase the coverage of LV power networks
c) The PACMECS should increase vending points to enable easy purchase of the units.

Pader District local government

Beneficiaries from Lagwai Zone A and B in Pader Town council were interviewed. The beneficiaries received the connections between April and December 2014.

The beneficiaries noted life was much better than before. *Achan Betty from Lagwai Zone A, noted that ''I never used to operate this bar and restaurant business due to lack of electricity. When we received free power, my husband opened for me a business where I obtain Ug shs 150,000 monthly income with Ug shs 50,000 as profit*.

The beneficiaries highlighted the benefits as:

(i) Increased business growth
(ii) Ability to charge phones without paying at charging points.

The challenge noted was:

- Load shedding which affected their schedules

Source: Field Findings

iii) Bundibugyo Energy Cooperative Society (BECS)

Implementation of the OBA project is implemented in the districts of Bundibugyo, Ntoroko and Kabarole districts. The project started in June 2013. Household connections commenced in October 2013. The project end date was 2015 but has been granted an extension to 2017.

The manager of the project highlighted that the Bundibugyo area was still considered poor as revealed by the poverty mapping. Therefore, the region was eligible for the subsidy. Other requirements highlighted included; existence of a pole for the past 18 months, willingness to connect to power with a constraint of ability to pay for connection costs;

A total of 1,404 connections had been made. The total number of connection in Bundibugyo were 900; 499 customers have been connected in Ntoroko district; while only 5 connections had been made in Fort Portal, Kabarole district. From July 2014 to February 22nd 2105, a total of 566 out of annual target of 1500 connections had been made.

The requirements that the customers need to have included; a wired house and a minimum of Ug shs 20,000 as initializing energy. However, the wiring costs were a hindrance to several would be customers. A customer had to pay a minimum of Ug shs 300,000 to wire a basic house comprising a small sitting room and bedroom. It was therefore a big hindrance to the rural poor.

The REA contracted Real Marketing Limited to carry out sensitization campaigns to publicize the project. The company had done their marketing by putting up fliers, newspaper pull outs about the OBA. However, it was highlighted that the company has not been effective. They are not involving the BECS team which is on ground. The marketing group has also not done door to door marketing.

A sample of 15 beneficiaries was interviewed to establish beneficiary satisfaction of the project. A total of 10 beneficiaries were from the sub county of Bundikuyali and Bundiwungho in Bundibugyo district. A total of 5 beneficiaries were from Fort Portal. Similar benefits were highlighted as with PECMEC and beneficiaries connected by UMEME such as; ability to light; watch TV, charge phones, and running their small businesses.

The challenges highlighted by the Manager included;

- The customer awareness was still low
- Delay to reimburse funds for the completed connections. The last requisition took six months to be paid.
- The approved connection tariff of Ug shs 390,000 was still low. It was not sufficient to make profit. A total of Ug shs 531,000 is the standard connection tariff. The company was therefore reluctant to connect OBA customers. The tariff of Ug shs 391,000 was approved in 2012. Inflation increased the cost of materials that were not considered.

Prepaid CIU in Bundikuyali sub county, Bundibugyo district

The recommendations suggested by the manager were;

- The REA should liaise with the service provider rather than the consultant to carry out customer sensitization
- The Rural Electrification Agency should effectively re-imburse the company to enable them acquire materials and connect more customers.
- The REA should conduct the project in form of a pre-financing other than the service provider borrowing.

iv) UMEME Iganga District

A total of 319 customers had been supplied with electricity. The manager UMEME indicated that the response rate from the customers was good. The conditions to benefit from the

project were simplified. Previously, only customers that were close to particular grid lines for 18 months would qualify. The ERA mandated the company to connect everyone that was within a no pole service.

Two OBA connections in Bulumbandi Central village, Nakigo Sub County, Iganga District

It was however noted that the wiring costs are bigger than what government was subsidizing.

A sample of 10 beneficiaries was made in Iganga district. Those that had connected to the power were satisfied with the service. However, others indicated that they had applied in 2014 but had not yet received connection.

There were also some issues of substandard works like fewer materials on the connections in Iganga district.

Challenges

- Delays between application and connection to electricity
- Fewer materials on some connections

Recommendation

- The REA should carry out an investigation on the connection materials sent to the service Providers and how they are utilized

UMEME- Mbale district

The OBA connections in Mbale region started in October 2014. It was noted that the project was free but the customer was required to contribute Ug shs 41,300 which would be re-imbursed in form of free units to the customer.

In the region, people had a mentality that electricity was free and the district was known for illegal connections. Beneficiaries therefore thought that they would fill the forms and then wait for power. Initially, a number of them had poor installation. The UMEME therefore took an

initiative to sensitize communities about the OBA. As a result, some member resorted to legal connections.

It was noted that Mbale district can afford to pay for power. However, there are areas that have rampant 'hooking' or stealing of power. This frustrates would be customers.

A total of ten beneficiaries from Mbale and Bududa districts were sampled to establish their views on the OBA project. The various benefits of lighting, ability to charge phones, convenience as one did not have to travel to UMEME offices were highlighted. However, all beneficiaries mentioned that the power was irregular, on and off especially between 7pm and 11 pm. It was likely that at this time, people that used electricity illegally get on to the system.

Recommendations

- The ERA should enforce the electricity act. Illegal connections should have serious penalties.
- The power distributors in collaboration with the police should enforce the electricity act. Such measures will curb illegal connections.

Analysis

Link between financial and physical performance

By the end of December, 2014, 80% of the claimed funds had been paid to the contractors for 13% physical progress. Whereas there is a variation, there was a good link between financial and physical since payments are made upon completion and verification of the connections. The project was however progressing at a slow pace.

Achievement of targets

Project performance was below average by the end of December, 2014. 13% of the planned target was achieved. Umeme the major utility operator in the country expected to provide 75% started connections much later and at slow pace. The other utility companies do not have adequate financial capacity to pre-finance as they await verification and reimbursement.

Conclusion

The project performance was not satisfactory as only 5,014 connections were made compared to the planned 37,635. The slow pace was attributed to late start of connections due lack of an independent Verification Agent in place to enable verification of connections made. Majority of the other LDCs have limited financial capacity to make many connections as they await verification, which was noted to take time to be completed. The customer awareness was still low, and distribution of network LV network among the potential clients was narrow.

Recommendations

- The IVA should expedite verification process to enable faster roll out of the project.
- The UMEME should expedite connection of the qualified customers
- The REA should increase distribution of the LV network in the service territories

- The marketing company should step up the publicizing of the project.

7.3.2 Project 1262: Rural Electrification project

Background

This project takes over from the old project implemented under Vote 017 that ended with the first Rural Electrification Strategy and Plan (RESP 2001 - 2010). The RESP II (2013-2022) will provide funding for undertaking rural electrification projects with the overall objective of achieving rural electrification access of 26% by June 2022.

The GoU and Development partners jointly support the project. The projects are initiated by REA in pursuit to achieve increased access to electricity by rural communities. Outputs include; 1,280,000 new connections by the end of the project in June 2022.

In the medium term, focus would be on; construction of 5000 km of power lines, Connection of 20,000 customers, and installation of 7,000 PV systems.

The following outputs were monitored during Q2 FY 2014/15:

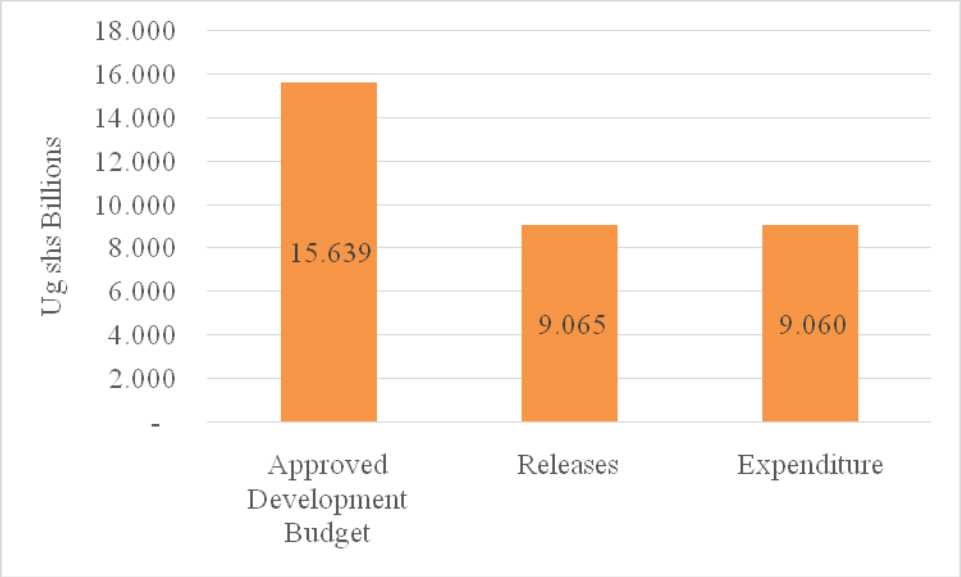
- 100% completion of Lot 7: Apac-Chegere-Alemi
- 100% completion of Serere/Soroti/Pallisa/Kapchorwa/Kumi
- 100% completion of Ntungamo/Rukungiri/Kabale/Kanungu/Kisoro
- 100% completion of Lot 9: Bundibugyo/Kasese/Rubirizi
- 100% completion of Gulu/Kitgum/Pader/Otuke/Lamwo

Financial performance

The approved GoU development budget for the Rural Electrification project in FY2014/15 is Ug shs 15.639 billion of which 58% was released. This represents an excellent release performance. Expenditure performance in the first half of the year was excellent as 99.9% of the released funds were absorbed (See figure 7.17)

Expenditure was made on output name; Construction of Rural Electrification Schemes (On - Grid) under the line item of other fixed assets. This represented a good allocative efficiency as the line item relates to the materials used in the construction of power lines.

Figure.7.17: Financial Performance for Project 1262



SOURCE: IFMS

Physical performance

A sample of power lines in the western and Eastern Uganda were monitored. Construction had started on some sections of the lines. Majority of the lines were either at initial stages of construction or works had not commenced Overall, performance was below average. Physical performance of the projects is detailed below.

Completion of Apac-Chegere-Alemi - 100% completed

The project involved the construction of sections of High Voltage (HV) power networks in the districts of Lira, Apac, and Soroti. The total line route length for the lot is 106km of HV power network and 100 km of LV network.

The contract was awarded to M/s A-Z Maintenance and Engineering services Limited in June 2014 for fifteen months. M/s Multi Consult supervises the project. Construction works started in August 2014. The contract amount for the lot was US$ 3.9 million.

The project is jointly financed by BADEA (43%), GoU (15%), and Saudi Arabia (42%). A total of US$728,000 (60%) of the advance payment had been paid to the contractor by January against the bank guarantee submission, which was made on 20th, July, 2014. This implies a delay in making of the advance payment to the contractor. Overall progress of the project was 30%. Table 7.27 shows status of implementation.

Table.7.27: Performance of Lot 7: Apac-Chegere-Alemi line

Scope of works	Observed physical performance by line section in February 2015
Akalo – Bala power line	
Apac/Kole districts 8Km of HV power network 13Km of LV power network Total number of Transformers 2X100kVA 1X50kVA 3X25kVA	The line section serves the districts of Kole and Apac districts. The line is to serve various social institutions in the two districts. These include: Akalo progressive technical institute, Sardis nursing school, Adyiang Primary school, Teobiya, Teobiya Catholic Church, Omuge Primary school (P/S), Bala HCIV, Bala P/S, Bala Catholic Mission and Fr. Aloysius Secondary school. By 28th, January 2015 excavations and pole erections were at 85% and 75% complete for the LV and HV network respectively. Mobilization of equipment was at 20%. The key pending works were: electrical installations including; Stringing, Transformer installation, and air break switches.
Soroti Section 56 km of HV line 44 km of LV line Total number of transformers 1x200kVA 2x100kVA 14x50kVA 2x25kVA	The power line starts in Arapia sub county, Soroti district. The total route length is 60km. The line is expected to serve social facilities like Arapai Sub county, churches, health centre, and schools Progress of works on the section was majorly at pole erection which was at 70%.
Apac-Chegere Kole 40km of HV 44km of LV Total number of transformers 2x200kVA 2x100kVA 11x50kVA 2x25kVA	Construction works had not started.

SOURCE: FIELD FINDINGS

The key challenge for the project was delayed payment. Works stalled in September 2014 due to lack of funding. The materials that the contractor had procured were all used up and there were no funds to procure more. The contractor was awaiting completion of advance payment and payment of the interim certificate that had been submitted to continue with the construction works.

L-R: Akalo-Bala section Bala sub county, Apac District; Soroti Section, Arapai sub county, Soroti district. Both Sections at Pole erection Stage

a) Lot 9: Bundibugyo-Kasese-Rubirizi-Kamwenge

The contract was awarded to M/s M&T Construction Company Limited in June 2014. Construction works commenced in the same month with an expected completion date of June 2015. The project involved the construction of sections of High Voltage (HV) power networks in the districts of Bundibugyo, Kasese, Rubirizi and Kamwenge. The total route length for the lot is 44.39km of HV power network and 54.51 km of LV network.

The project is financed by GoU. The contract amount for the project is US$ 1.9 million. By February, 2015; the contractor has been paid US$ 194,025

The project was at the stages of pole erection and pit excavation. Table 7.28 shows status of implementation by district.

Table 7.28 Physical Performance of Bundibugyo-Kasese-Rubirizi-Kamwenge Power line Construction

Scope of works	Observed physical performance by line section in February 2014
Kamwenge Section 23.32km of HV network 24.2km of LV network 1x25kVA transformers 4x50kVA transformers 1x100kVA transformers	The project covers the sub counties of Kabuga and Kanara. The line will serve social institutions like; Kamwenge Secondary School (SS), Rwengero Primary School (PS), Kijalama PS, Mpanja SS, Kubabiro PS, Bweranyanje PS, Nyamasingwa PS, Kabanbiro SC, and Kabuga Health Centre (HC)II; The project is at the stage of pole erection
Kasese Section	The project covers Kahemderu village and Ihamba Trading Centre.

Scope of works	Observed physical performance by line section in February 2014
- 2.56km of HV and 5.92km of LV	Social institutions that will benefit from the project include; Ihamba Safari Lodge, Kahendo PS, Kahendo HC II, Good Hope Nursery School, and a landing site. The project was at pole erection stage.
Bundibugyo 9.5km of HV and 10.5km of LV	The line starts in Nyahuka trading centre and ends in Lamia trading centre. It traverses social institutions like; Nyambaro PS, Bubandi Seed SS, Bubandi Community Centre, Busunga HC, Mt. Zion Market, and URA immigration offices The project is at pit excavation and pole erection stage
Rubirizi 9.01km of HV and 13.15km of LV	The line starts from Nyabushabi trading centre and ends in Mwongera trading centre. The project traverses social centers including; Mwongera P/S, Mwongera SS, Mwongera SC, the Adventist Church, Ishaka Police Station. The project is at pole erection stage.

Source: Field Findings February, 2015

The major challenges that were delaying project implementation were;

1. Delayed payment to the contractor. The contractor had submitted payment claims.
2. However, only one certificate had been honoured.
3. Delays in clearance of materials including transformers, wires and insulator from URA customs


L-R: Pit excavation on Bundibugyo section; Pole erection in Kabuga trading centre; Kamwenge District

b) LOT8 NTUNGAMO/RUKUNGIRI/KANUNGU/KISORO/ KABALA AND ENVIRONS

The contract was signed in June 2014. Works commenced in July 2014 and expected completion date was June 2015. The contract was awarded to M/s China Jiangxi International Uganda Limited. Total contract sum is US$ 6,365,582.61. An advance payment worth US$ 1.2 million had been paid to the contractor.

The line covers the districts of Ntungamo, Rukungiri, Kanungu, Kisoro, Kabala and environs. Total route length is 160 km of HV and length of LV is 200km.

Total number of transformers is 105 with specifications; 13x 25kVA; 75x50kVA; 17x100kVA. The project has so far been implemented in the districts of Ntungamo and Rukungiri. Only 15km and 26km of HV have been covered in the districts of Rukungiri and Ntungamo respectively. Monitoring focused on Ntungamo district where most of the works were being implemented.

Pole erection was ongoing in Ntungamo district at 90%. Stringing had just commenced. Materials delivered on site were at 30%

Left -Right: Stringing works on Lot 8; Ntungamo Section

The main challenge delaying project implementation was inadequate advance payment to the contractor. The contractor recommended that the REA should expedite payment.

7. lot 10: Gulu/Kitgum/Pader/Otuke/Lira/Lamwo- 50% completed

The contract was awarded to M/s C&G Andijes Group Ltd at a contract sum of US$ 1,413,915.75. The project started in September, 2014 for a period of fifteen months. By February, 2015 ongoing works were only in Otuke district. Overall completion for the project in the district was 40%. Table 7.29 below presents the performance on Otuke Section.

Table 7.29: Performance of grid extension project; Otuke Section

Scope of works	Observed physical performance by line section in Febraury,2015
Adwari-Okwang – Baralegi state lodge	
Otuke district 31Km of HV power network 10Km of LV power network	The line section traverses three Sub-counties of Adwari and Okwang. The line is to serve the following social institutions of: Adwari Sub-county, Okwang Sub-county, Okwang HCII, Okuwaya sub county, Okwang Primary School, and Liberty primary school. Other areas to be served are: Okelamoni Trading Centre (T/C), Baralegi State lodge, a grinding mill, Patala market, and Military offices.

Scope of works	Observed physical performance by line section in Febraury,2015
Transformers 3X100kVA 1X50kVA	By 29th, January,2015; pole erections completion for the HV and LV were at: HV pole erection - 81% LV pole erection - 80% Stringing and dressing of the poles had not yet commenced. All the required equipment had been mobilized. The challenge to project implementation was the: Hard rock that was encountered Some PAPs who require compensation for the power lines.

Source: Field Findings

Analysis

Link between physical and Financial Performance

By the end of December 2014 the 99.9% absorption of GoU funds was not commensurate to the achieved physical works on ground. This was because some of the transmission lines that were under joint financing where funders like BADEA had delayed to disburse the funds due to a change in their loan requirements that was instituted after the contractors had submitted their bank guarantees. There was therefore a poor link between the physical and financial performance. Performance on all the grid extension projects visited was below average.

Achievement of targets

The key target of achieving at least 50% progress of the grid extension projects was not achieved. One of the sampled projects had not commenced while four out of the five sampled projects were at initial stages of commencement. The reasons highlighted for delay in project implementation were; delayed payment of contractors and delays in clearance of materials from customs.

Conclusion

The project performed below average in construction of power lines. The sampled grid extension projects had either just commenced or not started at all as compared to intended 50% progress. Works were ongoing at a slow pace due to inadequate construction materials and inadequate payment to the contractors.

Recommendations

- The REA should with other project funders ensure that contractors are timely paid for the jointly financed projects.
- The Directorate of Economic Affairs and the REA should expedite clearance of taxes at the customs to ensure availability of construction materials.

General conclusion

Overall performance for the sector was fair as was the case for FY 2013/14. This was due to persistent problems of delayed conclusion of the financing agreement between the China's Exim bank and GoU; prolonged procurement process; slow acquisition of the Right of Way for projects implemented by the UETCL, MEMD and the petroleum subsector; and late payments to the contractors under the Rural Electrification projects. Resources in a number of projects sampled were used to achieve project outputs. These include;

The Management of Oil and gas sector in Uganda: 60% of project expenditure was spent on capacity building and Government Buildings and Service Delivery Infrastructure. Eight staff commenced Masters Degree programs. Construction of the data centre was 95% complete. Other works ongoing that progressed well at the Kingfisher Oilfield included; construction of the access road, camps and materials yard that stores equipment including rigs and drilling pipes.

Construction of the Oil Refinery: 72% of the Project Affected Persons had been compensated for their property. A total of 533.6 acres of land was purchased to resettle vulnerable Physically Displaced Persons who preferred in kind compensation.

Karuma Hydropower plant was progressing well: Procurement for a consultant to construct resettlement houses and relocated social institutions was underway. Construction of the hydropower plant was however at a slow pace as 8% had been achieved against the targeted 20% completion.

The Modern Energy from Biomass for Rural Development project was doing well but suffered limited provision of funding as it is not apriority.

Rural Electrification projects: The grid extension projects were all behind schedule.

Recommendations

- The procurement units in UETCL and MEMD should initiate and expedite procurements early enough to enhance timely absorption of funds.
- The district land boards should review the land rates regularly to avoid issues of low compensations due to use of old rates when valuing land.
- The Ministry of Lands and Urban Development should revise the land policy to solve the Right of Way issues. This must be cautiously executed to ensure a win-win situation between government and Project Affected Persons while ensuring that implementation of projects is not paralyzed.
- The MEMD should support the Modern Energy from Biomass for Rural Development project to achieve its project outputs.

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