



GOVERNMENT OF MALAWI

COMPACT COMPLETION REPORT

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ACRONYMS

AFUR	African Forum for Utility Regulators
AIDS	Acquired Immunodeficiency Syndrome
AMR	Automatic Meter Reading
BoT	Board of Trustees
CAD	Compact Appraisal Document
CCR	Compact Completion Report
CDM	Centre for Development Management
CE	Consulting Engineer
CED	Compact End Date
CEO	Chief Executive Officer
CES	Central Electricity Supply
CIF	Compact Implementation Funding
COD	Communications and Outreach Directorate
COSS	Cost of Service Study
CPPRS	Contractor Past Performance Reporting System
CRISIL	CRISIL Risk and Infrastructure Solutions Limited
CSOs	Civil Society Organization
DCEO	Deputy Chief Executive Officer
DFM	Detailed Financial Model
DHRMD	Department of Human Resource Management and Development
DMPA	Dredged Material Placement Area
DNP	Defects Notification Period
DQA	Data Quality Audit
DQR	Data Quality Review
EAD	Environmental Affairs Department
ECA	Economic Consulting Associates
EGENCO	Electricity Generation Company
EMIS	ESCOM Management Information Systems
ENRM	Environment and Natural Resource Management
ERR	Economic Rate of Return
ESCOM	Electricity Supply Corporation of Malawi
ESI	Electricity Supply Industry
ESIA	Environment and Social Impact Assessment
ESMM	Environment and Social Management Manual
ESMP	Environment and Social Management Plan
EY	Ernst-Young
GIS	Geographic Information System
GOM	Government of Malawi
HIV	Human Immunodeficiency Virus
HMWMP	Hazardous Material and Waste Management Plan
HPP	Hydro Power Plant
HRV	Hausmann-Rodrik-Velasco
HSMM	Health and Safety Management Manual
HV	High Voltage
IC	Internal Controls
ICT	Information and Communications Technology
IDP	Infrastructure Development Project
IEC	Information Education and Communications

IHS	Integrated Household Survey
IHS4	Fourth Integrated Household Survey
IHSP	Integrated Household Survey Panel
IPP	Independent Power Producers
IRP	Integrated Resource Plan
ISMO	Independent Systems and Market Operator
ITT	Indicator Tracking Table
JGH	Johs. Gram Hanssen
KPI	Key Performance Indicator
kV	Kilovolts
kVA	Kilovolt Ampere
kWh	Kilowatt hour
L&T	Larsen and Toubro
LILO	Looping and Looping Out
LRMC	Long-Run Marginal Cost
LRP	Livelihood Restoration Plan
M&E	Monitoring and Evaluation
MCA	Millennium Challenge Account
MCC	Millennium Challenge Corporation
MEED	Monitoring, Evaluation and Economics Department
MERA	Malawi Energy Regulatory Authority
MGDS	Malawi Growth and Development Strategy
MIS	Management Information System
MMCT	Mulanje Mountain Conservation Trust
MNREM	Ministry of Natural Resources Energy and Mining
MRA	Malawi Revenue Authority
MUST	Malawi University of Science and Technology
MVA	Mega Volt Amp
MW	Megawatt
MYFP	Multi-Year Financial Plan
NCC	National Control Centre
NES	Northern Electricity Supply
NGO	Non-Government Organization
NSO	National Statistics Office
NTLR	Non-Technical Loss Reduction
ODPP	Office of the Director of Public Procurement
OHL	Overhead Line
OPGW	Optical Ground Wire
ORT	Other Recurrent Transaction
PA	Procurement Agent
PAP	Project Affected Person
PCA	Program Cooperation Agreement
PD	Procurement Directorate
PES	Payment for Ecosystem Services
PIA	Program Implementation Agreement
PIU	Program Implementing Unit
PMR	Power Market Restructuring
PP	Procurement Plan
PPG	Program Procurement Guidelines
PPP	Project Procurement Plan
PS	Principal Secretary

PSRA	Power Sector Reform Agenda
PSRP	Power Sector Reform Project
RAP	Resettlement Action Plan
RBCI	Rapid Billings and Collections Improvement
REIMA	Research Info Masters
RERA	Regional Energy Regulatory Authority
RoW	Right of Way
SAPD	South Africa Power Development
SAPP	Southern Africa Power Pool
SAR	Semi-Annual Review
SB	Single Buyer
SCADA	Supervisory Control and Data Acquisition
SOE	State Owned Enterprise
SEP	Stakeholders Engagement Plan
SES	Southern Electricity Supply
SGEF	Social and Gender Enhancement Fund
SGIP	Social and Gender Integration Plan
Shire BEST	Shire River Basin Environmental Trust Support
SMEC	Snowy Mountains Engineering Company
SMO	System and Market Operator
T&D	Transmission and Distribution
TIP	Trafficking In Persons
VLSS	Village Loans and Savings Schemes
WSM	Weed and Sediment Management

PREFACE

In December 2007, MCC announced that Malawi was eligible for compact development and implementation, after the successful implementation of the Threshold Program. The support from MCC is designed to reduce poverty through economic growth in partner countries. At that time, the GOM had already enshrined this requirement in the Malawi Growth and Development Strategy (MGDS). Investing in Malawi’s insufficient, unreliable, and poor-quality power supply was found to have a substantial effect on return on investment. Before Compact implementation, it was estimated that economic losses relating to power outages were equivalent to 2-3% of GDP, placing Malawi as one of the countries with the highest sales losses due to power outages and reliance on costly alternatives such as generators.

On April 7, 2011 the Government of Malawi and the Millennium Challenge Corporation signed a five-year compact agreement with the core aim of reducing poverty through economic growth. The total compact agreement was US\$350.7 million grant from the Millennium Challenge Corporation that was solely channeled into the energy sector, and in particular the electricity or power subsector. Compact implementation started on September 20, 2013 and came to an end on September 20, 2018. The Compact investments were implemented through three projects, namely; Infrastructure Development Project (IDP), Power Sector Reform Project (PSRP) and Environment and Natural Resource Management (ENRM) Project. Overall commitments and disbursements achieved at the end of the compact were 99.21%

The Compact Completion Report (CCR) presents the results of MCC Malawi Compact implementation. In terms of the Compact’s relevance to poverty reduction and economic growth, the report highlights that the interventions implemented under the specific projects are conservatively estimated to generate US\$567.2 million worth of income benefits over a 20-year period. The report also highlights the importance of engaging contractors/consultants on time to complete all agreed works. It is also important to note that the interventions implemented by MCA-Malawi, much as they were affected by time and cost, along with their subsequent outputs are regarded as of high value and of high quality for all the three projects.

Going forward, it will be crucial to sustain Compact investments in order to further realize the gains and stimulate economic growth. Sustainability plans were developed by key project partners and full implementation of these will be critical.

In order to attract more investment in the sector, the report highlights the need for continued implementation of sector reforms. What will also be critical is the continued implementation of a cost reflective tariff to attract more Independent Power Producers.

Simon Itaye
Chairperson, Board of Trustees
MCA-Malawi

Dye Mawindo
Chief Executive Officer
MCA-Malawi

Date.....

Date.....

EXECUTIVE SUMMARY

Compact Background

The Millennium Challenge Corporation (MCC) and the Government of Malawi (GOM) signed a compact agreement on April 7, 2011 with the core aim of reducing poverty through economic growth. The total compact agreement was US\$350.7 million grant from the Millennium Challenge Corporation that was solely channeled into the energy sector, and in particular the electricity or power subsector.

Malawi became eligible for the MCC Compact assistance in December 2007. A constraints analysis was conducted thereafter and a final report completed in May 2008. There were four major binding constraints that affected the Malawian economy, namely: electricity generation and supply; feeder roads and international corridors; water and irrigation development; and access to (financial) capital. Using the Hausmann-Rodrik-Velasco (HRV) growth diagnostic problem tree analysis the binding constraints were further explored and in the electricity subsector it was found that the challenges affecting electricity generation and supply cut across three main factors related to infrastructure, policy, and the environment. The challenges identified as relating to the state of the electricity infrastructure included: lack of generation capacity; limited transmission capacity; and, deteriorating conditions due to an old network grid. In terms of policy, the main challenges identified in the electricity subsector included: inadequate policy framework; a restrictive electricity supply industry that had barriers to entry, especially for private sector participation; inefficient processes related to revenue collection and operational inefficiencies; as well as, an insufficient tariff to cover the revenue requirements of the Utility. Given that Malawi's installed capacity is 99% hydropower, environmental challenges were also identified, related to poor land management along the Shire river basin and excessive deforestation leading to frequent hydropower disruptions.

The MCC Compact was formulated to address these challenges by ***building or repairing related electricity infrastructure*** cutting across generation, transmission, and distribution activities; ***reforming the power subsector*** with a particular interest in strengthening sector institutions governing the power subsector; and, ***sustaining the environment*** by focusing on short- and long-term environmental and natural resource management interventions. This compact was a major development initiative acting as a catalyst to revamp the power sector and eventually lead to three compact objectives, namely: reducing the cost of doing business; increasing access to electricity for the Malawian people; and, increasing value-added production. These three program objectives were, therefore, seen as the key areas where the MCC Compact would contribute towards the GOM development goal of reducing poverty through economic growth in Malawi.

After fulfilling the conditions precedent, the Malawi Compact entered into force on September 20, 2013 and successfully completed on September 20, 2018 with 99.21% of the US\$350.7 million fully committed and disbursed as of January 2019. The Millennium Challenge Account – Malawi (MCA-Malawi) was mandated by GOM to operate as an independent Trust to oversee the implementation of the MCC Compact.

The Projects

The Malawi Compact was implemented through three projects:

- (1) The **Infrastructure Development Project (IDP)** aimed at to improving the availability, reliability, and quality of the power supply by increasing the throughput capacity and stability of the national electricity grid as well as to increasing efficiency of hydropower generation through investments in infrastructure development.
- (2) The **Power Sector Reform Project (PSRP)** aimed at creating an enabling environment for future expansion of the power sector by strengthening sector institutions and enhancing regulation and governance of the sector by rebuilding ESCOM into a financially strong, well-managed utility and developing a regulatory environment that supports public and private investment in new generation capacity and expanded access.
- (3) The **Environment and Natural Resource Management (ENRM) Project** aimed at mitigating the growing problems of aquatic weed infestation and excessive sedimentation in the Shire River Basin. To reduce costly disruptions to Malawi's hydropower generation, the project invested in weed and sediment management and the promotion of improved environmental and natural resource management practices in upstream areas. The ENRM project also included a Social and Gender Enhancement Fund (SGEF) for the empowerment of men and women to engage in sustainable land management practices.

The Malawi Compact also ensured the inclusion of social and gender inclusion within all three projects; a Social and Gender Integration Plan (SGIP) was developed to provide tools to support this process and monitor progress.

Progress Achieved during Compact Implementation (by Project)

(a) Infrastructure Development Project (IDP)

Nkula A Refurbishment Activity

This activity included refurbishment of electromechanical equipment and hydraulic steel structures; civil works and mechanical works; refurbishment of the generator and excitation system; and, refurbishment of high voltage equipment at 66 kV switchyard, including medium and low voltage equipment, control and protection equipment, as well as hydraulic steel structures. The refurbishment of Nkula A led to an uprating of the generators from 8 MW to 12 MW, and thus a total increase in generation capacity from 24 MW to 36 MW.

Transmission Network Upgrade Activity

The Transmission Network Upgrade interventions included the construction of Greenfield substations as well as the installation of 400 kV, 132 kV, and 66 kV overhead lines (OHL). In total, 367 km of OHL was targeted and 100% of the conductors were strung. These included: a 173 km 400 kV OHL from Phombeya in Balaka to Nkhoma; 400/132 kV substations at Phombeya, the takeoff point for the 400 kV OHL and Nkhoma 400/132 kV substation, which is the landing

point of the 400 kV OHL; 132 kV OHL from Chintheche substation to New Bwengu substation via Luwinga substation; 132 kV OHL from Nkhoma substation to Bunda Turnoff substation; 66 kV OHL Lilongwe ring, 66 kV OHL from New Bwengu substation to Old Bwengu substation; and looping in and looping out of 132 kV and 66 kV; refurbishment of Chintheche substation located in the northern part of Malawi; uprating and extension of Luwinga substation; construction of a new Bwengu substation; and, uprating and extension of Bunda Turnoff substation.

Transmission and Distribution Network Upgrade, Expansion and Rehabilitation Activity

Under this activity, the interventions implemented covered all three ESCOM regions, namely: Northern Electricity Supply (NES), Central Electricity Supply (CES), and Southern Electricity Supply (SES) regions. The key activities implemented included: up-rating of existing network connections (33 kV and 11 kV); extension of existing substations (including 66 kV); up-rating of transformers in existing substations; construction of new substations; installation of improved protection systems; provision of network extensions and connections; and, installation of new controls and communication systems (SCADA). A total of 45 km of OHL and underground cables were constructed under this activity.

(b) Power Sector Reform Project (PSRP)

The PSRP complemented the IDP by providing support to Government's policy reform agenda and building capacity in pivotal sector institutions such as ESCOM, EGENCO, MERA, and MNREM. The PSRP component consisted of two activities: the ESCOM Turnaround Activity and the Regulatory Strengthening Activity.

ESCOM Turnaround Activity

ESCOM Finances

A number of consultancies were implemented in order to restructure ESCOM's finances. MCA-Malawi engaged Ernst & Young for a consultancy which assisted in (a) development of a Detailed Financial Model (DFM); (b) quarterly and annual financial reviews of ESCOM finances; (c) development of a Financial Plan; (d) conducting training for ESCOM management on the DFM. MCA-Malawi also engaged Azorom Limited to carry out the general tasks of: (a) employment of a Financial Turnaround Team (including mentors); (b) implementing a Non-Technical Loss Reduction (NTLR) study and development of a Strategy to address the challenges; (c) Rapid Billings and Collections Improvement (RBCI); (d) strengthening of ESCOM Internal Controls; development of ESCOM's annual maintenance plan; and, (e) Fixed Asset Mapping. MCA-Malawi also funded a new automated ESCOM Management Information System (EMIS). Under this deliverable, MCA-Malawi engaged two consultants: the first consultant, AH Consulting, was responsible for system design and supervision of the implementation of ESCOM's Management Information System (EMIS), while the second consultant, Indra Sistemas, was responsible for the development and implementation process of the EMIS. The EMIS is a state of the art management information system that has the capabilities of an Enterprise Resource Planning (ERP) system, energy balancing functions, GIS data module, and network development module, among others.

The system went live in January 2018 and by Compact End Date (CED) all the modules had been finalized.

ESCOM Corporate Governance Interventions

Under this component, Azorom implemented four key activities to support the improvement of corporate governance at ESCOM. The key activities implemented included support to ESCOM Strategic Planning by Board of Directors and the development of a Board charter and code of conduct. MCA-Malawi also funded technical assistance to benchmark ESCOM on Corporate Governance Standards which was implemented by Tetra Tech. The main objective of the assignment was to undertake a corporate benchmarking study for ESCOM with the goal of providing the utilities with information related to the current state of corporate governance referenced to other comparator utilities or State Owned Enterprises (SOEs), as well as recommendations on how to strengthen good corporate practices, support decision makers to establish corporate governance practices that strengthen the effective oversight of their operations and strategic development. MCA-Malawi engaged Feedback Infra and Graham Carr to undertake annual performance reviews on ESCOM for a base period (FY2013-2014) and two option periods based on the performance during the base period to cover ESCOM FY2014-2015 and FY2015-2016 respectively. The main objective of the consultancy was to evaluate ESCOM's efficiency and efficacy in areas of procurement, management and operational performance with a broad focus on the processes, procedures, controls, and policies used to ensure efficient and effective operations by the utility.

MCA-Malawi also funded a Social and Gender Institutional Audit to assess the extent to which ESCOM integrates social and gender perspectives in key aspects of its operations (policy formulation, planning and development, transmission, distribution and customer services, human resources management, information and communication) to: ascertain the level of staff understanding of social and gender mainstreaming and related issues, promote the learning of individual staff, divisions, working groups, management, and the whole organization; establish a baseline for all social and gender appreciation of management and staff of ESCOM and focal areas of concern; and, to identify and define ways of addressing strengths and weaknesses, gaps, challenges, and opportunities for effective social and gender integration within ESCOM.

ESCOM Operations

MCA-Malawi signed a contract agreement with Fichtner GmbH & Co. to undertake an organizational review and develop a transitional organizational structure for ESCOM. The main objective of the assignment was to develop and implement a rational organizational structure for ESCOM that would ensure delivery of results under such circumstances which include implementing a number of donor-funded projects, improving operational efficiency, increasing financial controls, improving the ICT environment, professionalizing the workforce and ensuring accountability and transparency to ESCOM's internal and external operations. Specific activities implemented included development and implementation of a rational organizational structure for ESCOM that ensures delivery of results such as implementation of donor-funded projects, improving operational efficiency, increasing financial controls, improving the ICT environment, professionalizing the workforce, and ensuring accountability and transparency to ESCOM's

internal and external operations. MCA-Malawi also signed a contract agreement with Cardno Emerging Markets USA Limited to provide procurement oversight and advisory services to ESCOM. The specific objectives of this agreement included: (i) review and development of procurement systems and procedures with the aim of improving ESCOM's procurement functions, improvement of existing and/or development of new policies and procedures to strengthen the internal control environment; (ii) identify procurement capacity gaps within ESCOM, develop procurement capacity in core skill areas throughout the procurement process, and ensure that ESCOM procurement professionals and other ESCOM staff who rely on ESCOM's procurement function to accomplish their work benefit from a comprehensive, well-structured procurement training program covering GOM public procurement law and desk instructions developed by ODPP; and (iii) undertake implementation support of ESCOM procurement systems and procedures by designing and implementing a plan of action/work plan that enables and ensures that ESCOM procurement unit has the information, tools and staff capabilities to execute all relevant procurement tasks.

Regulatory Strengthening Activity

The Regulatory Strengthening Activity complemented the Infrastructure Development Project and the ESCOM Turnaround Activity by providing support for the Government's policy reform agenda and building capacity in pivotal sector institutions such as MERA and MNREM. The objectives of the Regulatory Strengthening Activity were to develop a regulatory environment, consistent with best practices in independent power utility regulation, that supported investment in generation and grid capacity at an affordable cost, with the potential participation of the private sector. The specific areas of interventions are described below. Activities implemented under this activity included: a cost of service study to determine appropriate tariff levels and schedules to achieve full-cost recovery, more efficient utilization of electricity, and achievement of social objectives. This activity was implemented by Economic Consulting Associates (ECA) Limited. Another key activity was Power Sector Tariff, Regulatory and Institutional Improvement which included the need to ensure efficient and effective policy, legal and regulatory tariff reforms. Under this activity, MCA-Malawi signed a contract agreement with Aurecon AMEI Limited to provide tariff and regulatory advisory services to both ESCOM and MERA and conduct a training needs assessment. An additional key activity, implemented by CRISIL Risk and Infrastructure Solutions Limited (CRISIL), focused on Benchmarking and Capacity Building at MERA. The main objective of this assignment was to undertake a benchmarking study for MERA and train MERA on regulatory best practices. Another key activity was on creating an Enabling Environment for Public and Private Sector Investment Sub-Activity that included a contract with an Energy Advisor at MNREM; contract agreement with AF-Mercados Energy Markets International to undertake a Power Market Restructuring Study, as well as assist ESCOM and GOM to implement the proposed recommendations. The main objective of the Power Market Restructuring Study was to develop a power market restructuring road map to guide the future of the Electricity Supply Industry (ESI) in Malawi to allow for greater competition in both the generation and distribution sectors of the ESI; and, development of an Independent Power Producer (IPP) Framework designed in collaboration with an IPP Advisor engaged by MCA-Malawi.

(c) **Environment and Natural Resources Management Project (ENRMP)**

The three ENRM activities implemented under the MCC Malawi Compact included the following: (i) Weed and Sediment Management; (ii) Environment and Natural Resources Management (ENRM); and, (iii) the Social and Gender Enhancement Fund. The Weed and Sediment Management (WSM) activity involved the procurement and use of mechanical equipment to reduce sedimentation and aquatic weed infestation at the Liwonde Barrage, and Kapichira HPP. The equipment procured included the following:

- **Liwonde Barrage:** Two harvesters, including conveyer accessories, supplied by JGH/Aquarius in December 2017. Additional activities included the purchase of two tipper trucks which were delivered in September 2018
- **Kapichira Plant:** Development of a new Dredged Material Placement Area DMPA and the supply and use of a dredger delivered by Ellicott Dredgers, supply of two tipper trucks, a backhoe loader and sediment monitoring equipment.

The ENRM component of the Compact also comprised: a) the established of an Environmental Trust responsible for funding future ENRM and SGEF programs post compact to continue addressing the barriers to sustainable land management and social and gender inclusion among communities in the Shire River Basin; b) support to eleven Non-Governmental Organizations (Grantees) who were working on various environmental management interventions in the upper and middle Shire catchments. The ENRM activity supported grants to projects that reduce soil erosion by improving land management activities in high-priority (or “*hotspot*”) catchment areas identified in baseline assessment reports as being particularly large contributors to excessive soil runoff in the Shire River Basin. In August 2015, MCA-Malawi signed contracts with nine (9) NGOs to implement ENRM SGEF interventions in the Upper Shire River. Two additional grants were signed in December 2015, making the total number of grants signed eleven (11).

Findings from the End-Term Evaluation conducted by IOS Partners on behalf of MCA-Malawi showed that implementation of grants activities led to the following: (a) communities were provided with alternative sources of income, thereby, enabling forests to be conserved; (b) greater awareness of environmental issues was achieved; (c) a saving culture was encouraged through the creation and operationalization of Village Loans and Savings Schemes (VLSS); (d) VLSSs have enabled people to borrow sizeable amounts of money used to buy assets or as business capital; (e) women’s empowerment in terms of contributing meaningful financial resources to their family units, as well as more women having influential positions in the community and contributing meaningfully to developmental decisions in the community; (f) improved literacy levels of both men and women; (g) a decrease in the rates of domestic violence; and, (h) a decrease in school dropout rates as parents are better able to pay for school fees for their children.

Under the ENRM project, MCA-Malawi also signed a cooperative partnership agreement with Mulanje Mountain Conservation Trust (MMCT). The overall objective of the cooperative partnership was to establish the operation of an environmental trust to continue addressing siltation, aquatic weed infestation and related environmental degradation problems that negatively impact hydropower generation along the Shire River Basin. The Trust was expected to serve as a sustainable organization, able to continue funding programs following compact closure, to support

sustainable land use practices, and to promote gender equity in similar geographic areas. The cooperative partnership agreement was expected to run for 31.5 months from the establishment of the partnership. However, due to nonperformance of MMCT, the cooperation agreement was terminated on 31st January 2018. The Shire Basin Environmental Support Trust (Shire BEST) was subsequently set up to champion the funding requirements for the Shire Basin and provide a mechanism for sustainable financing of ENRM projects. Financial resources to provide core funding for Shire BEST projects are expected to be supported by a Payment for Ecosystem Services (PES) that basically include a levy included in the electricity tariff. EGENCO and ESCOM will be providing the initial financial support for the operations of Shire BEST. In future, this will be scaled up to other companies and institutions whose businesses depend on the Shire Catchment water resources.

Recommendations

- (1) The investments achieved under the Compact through the power sector revitalization project are collectively seen as a catalyst to future growth and investments in Malawi's power sector. In order to ensure successful utilization of the increased throughput capacity, from 260 MW to 960 MW, GOM needs to attract more generation capacity especially from IPPs.
- (2) Important reforms that are key to the success of the power sector in Malawi include the **creation of an independent, transparent, and trustworthy Single Buyer**, and **implementation of a cost-reflective tariff** to ensure that ESCOM is financially sound and creditworthy to IPPs that are expected to do business with as well as reduce the cost.
- (3) Since the major source of power generation in Malawi is the Shire River, continuance of ENRM and SGEF activities in the upper and middle Shire River will be crucial if Malawi is to mitigate the disruptive effect of weeds and sediment that greatly affect power generation at the hydropower plants along the Shire River.

CHAPTER 1

INTRODUCTION

1.1 Compact Overview

The Millennium Challenge Corporation (MCC) and the Government of Malawi (GOM) signed a compact agreement on April 7, 2011 with the core aim of reducing poverty through economic growth. The total compact agreement was a US\$350.7 million grant from the Millennium Challenge Corporation solely channeled into the energy sector, and in particular the electricity or power subsector. The Compact Goal is in line with the Malawi Government Growth and Development Strategy (MGDS) to reduce poverty through economic growth. Estimated to generate US\$567.2 million worth of income benefits over 20 years,¹ the Compact objective was to stimulate growth by raising the profitability and productivity of enterprises and value added production in key growth sectors such as agriculture, manufacturing, mining and service sectors; increasing investment and employment income; reducing energy costs to enterprises and households; and expanding access to electricity for Malawians. It is envisaged that these goals and objectives would be realized through the MCC's investments that are expected to improve the availability, reliability, and quality of power supply in Malawi; increase the throughput capacity and stability of the national electricity grid; increase the efficiency of hydropower generation; and create an enabling environment for private sector participation in the energy sector.

The Malawi Compact was implemented through three projects:

- (1) The **Infrastructure Development Project (IDP)** aimed at improving the availability, reliability, and quality of the power supply by increasing the throughput capacity and stability of the national electricity grid and increasing efficiency of hydropower generation through investments in infrastructure development.
- (2) The **Power Sector Reform Project (PSRP)** aimed at creating an enabling environment for future expansion of the power sector by strengthening sector institutions and enhancing regulation and governance of the sector by rebuilding ESCOM into a financially strong, well-managed utility and developing a regulatory environment that supports public and private investment in new generation capacity and expanded access.
- (3) The **Environment and Natural Resource Management (ENRM) Project** aimed at mitigating the growing problems of aquatic weed infestation and excessive sedimentation in the Shire River Basin. To reduce the costly disruptions to Malawi's hydropower generation, the project invested in weed and sediment management and promotion of improved environmental and natural resource management in upstream areas. The ENRM project also included a Social and Gender Enhancement Fund (SGEF) for the empowerment of men and women to engage in sustainable land management practices.

¹ See the Malawi cost-benefit analysis, 2013.

The Malawi Compact also ensured that social and gender inclusion was integrated in all three projects and that a Social and Gender Integration Plan (SGIP) was developed to provide tools to support this integration and monitor progress.

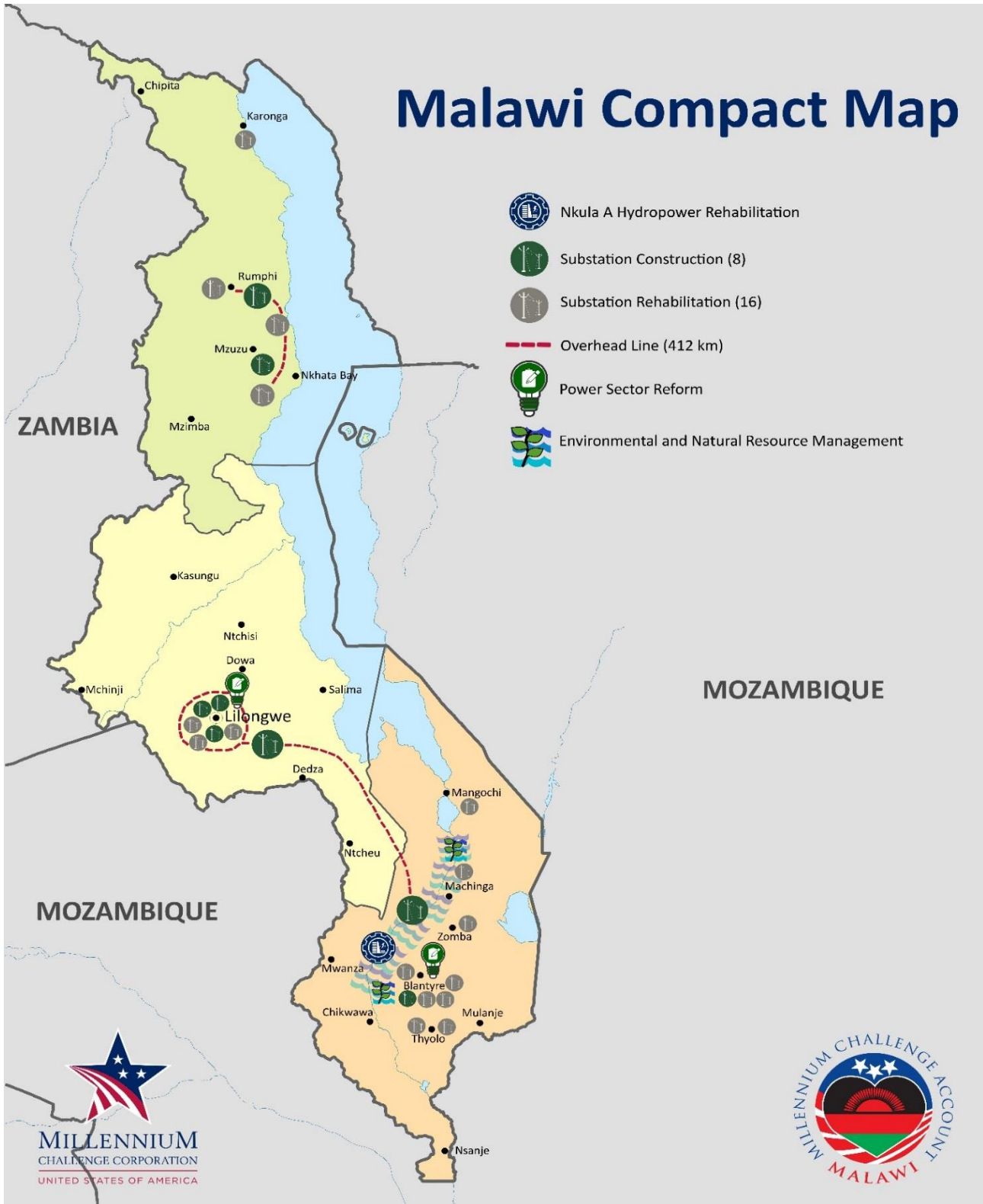
1.1.1 Key Compact Outcomes

The Government of Malawi, with assistance from MCC, implemented the Program with the following agreed outcomes:

- (1) An enabling environment for future expansion created by strengthening sector institutions and enhancing regulation and governance of the power sector that includes rebuilding ESCOM into a financially sustainable, gender equitable and operationally well-managed utility, and developing a regulatory environment that enables public and private investment in power infrastructure, particularly in new generation.
- (2) The availability, reliability, and quality of the power supply improved by increasing the throughput capacity and stability of the national electricity grid through investments in infrastructure, including investment by the Government in new generation.
- (3) Costly power disruptions reduced by ensuring the sustainability and increased efficiency of Malawi's hydropower generation along the Shire River Basin.

Figure 1 outlines the specific project sites where Compact interventions were implemented throughout Malawi.

Figure 1: Malawi Compact Project Sites



1.2 Purpose of the Compact Completion Report

The purpose of the Compact Completion Report (CCR) is to document and narrate the implementation process that MCA-Malawi undertook after entry into force on September 20, 2013 to end of Compact implementation, September 20, 2018, exactly five years of Compact implementation. The CCR also benefits from various independent evaluation reports that were implemented by MCA-Malawi. The major objective of the CCR, from MCA-Malawi's point of view, is an internal assessment with four key activities to be addressed:

- (1) To present the process performance of the Compact relative to its stated objectives;
- (2) To highlight the significant implementation issues that affected the implementation process related to relevance, efficiency, effectiveness, sustainability, time, cost, and quality of interventions;
- (3) To present key outputs and results achieved with a focus on documenting best practices and key lessons learnt; and
- (4) To provide some key recommendations to guide any future plans to adopt the Compact's approach for similar programs as well as the sustainability of project interventions implemented with particular reference to power sector reforms implemented.

It should be stated clearly at the outset that the CCR does not attempt to make an assessment on the agreed Compact outcomes as these will be done through independent performance evaluations that MCC has already signed with Social Impact and Mathematica to conduct end line evaluations in the years 2019 and 2021.

1.3 Methodology and Structure of the Report

The CCR methodology is based on a narration of overall progress made on the activities that were agreed to be implemented by the GOM with funding from MCC. The approach adopted is related to a description of implementation progress as narrated by the various directorates within MCA-Malawi that were involved in project implementation. Furthermore, the progress reported in this CCR was vetted and verified by the Monitoring, Evaluation and Economics Department (MEED) together with stakeholders from the Monitoring and Evaluation Department from the Ministry of Finance, Economic Planning and Development. In addition, some opinions on how the project was implemented were sought from key project stakeholders involved in the project and in particular reference from an independent assessment that was done by IOS Partners Inc., hired by MCA-Malawi to conduct an independent End-Term Evaluation of the Compact. The draft CCR was discussed internally by MCA-Malawi management staff as well as MCC before it was presented to the public on September 28, 2018. In terms of the structure of the report, there are four sections, namely: Chapter 1 introduces the CCR and describes the pre-compact preparatory activities that were implemented by MCA-Malawi secretariat, MCC, and GOM. Chapter 2 of the report describes how the compact administration and management were designed and implemented. Chapter 3 discusses the implementation process and progress made. Lastly Chapter 4 provides a summary, conclusions and recommendations based on the compact implementation process.

CHAPTER 2

COMPACT ADMINISTRATION AND MANAGEMENT

2.1 MCA-Malawi Establishment

As a requirement, GOM was expected to establish an independent institution to implement the agreed Compact with MCC. GOM established MCA-Malawi as an independent legal entity empowered to carry out the Government's obligations, and to implement the activities in accordance with the Compact. The mandate given to MCA-Malawi was to achieve the Compact Goal and the Program Objective through implementation of the Power Sector Revitalization Project. Specifically, MCA-Malawi was expected to ensure that it does not engage, directly or indirectly, in any activity prohibited under the Compact, and was expected to operate at all times in accordance with the requirements set forth in the Accountable Entity Guidelines provided in the PIA.

2.2 Management and Administration Structure

According to the signed Program Implementation Agreement (PIA), MCA-Malawi was governed by a Board of Trustees (BoT) which operated as an independent decision making authority providing the oversight, direction and decisions of MCA-Malawi in accordance with the Trust Deed, Compact Documents and all Supplemental Agreements. The Board of Trustees was supported by the Management Unit which was responsible for MCA-Malawi's day to day operations.

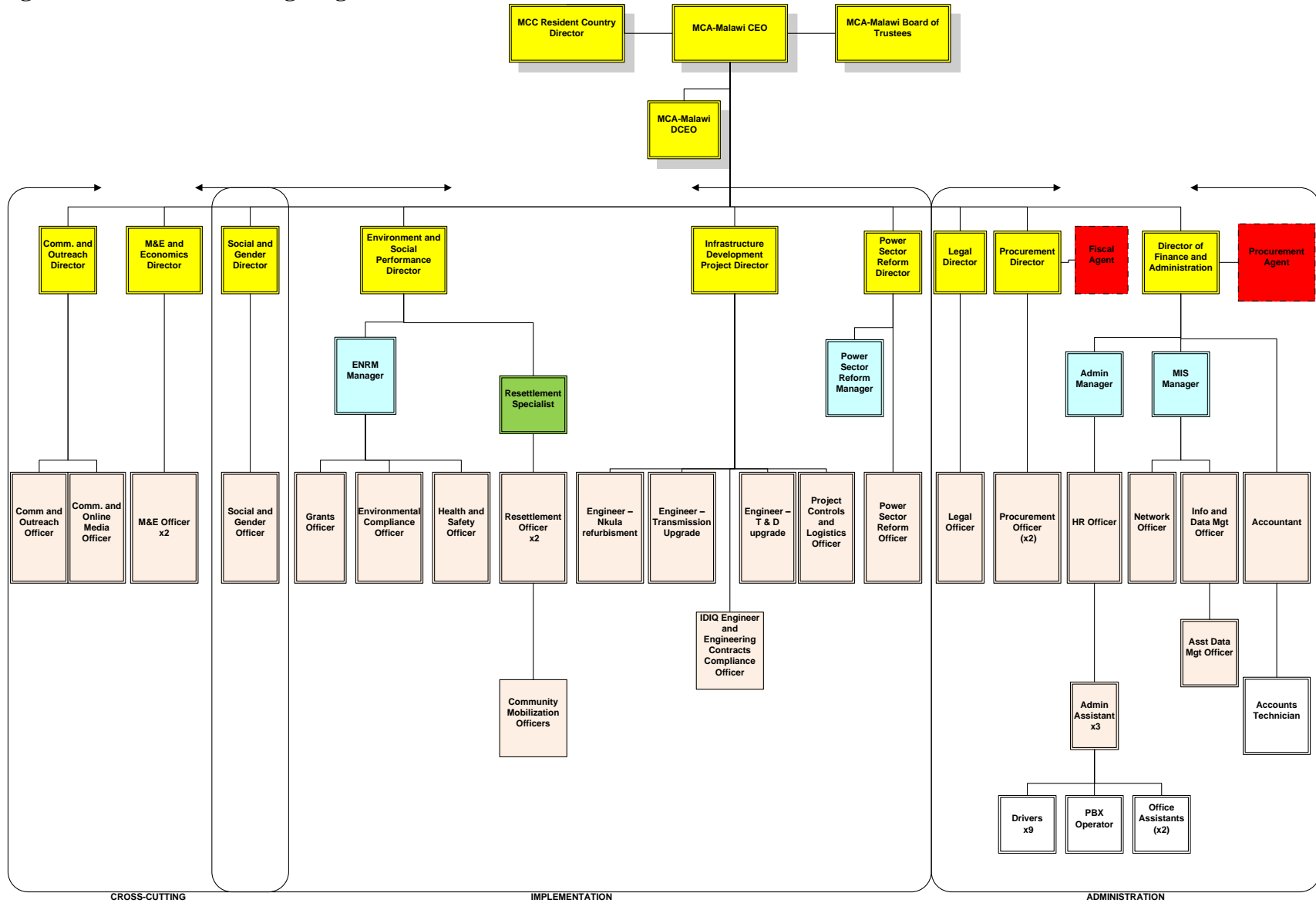
2.2.1 MCA-Malawi Management Unit

The MCA-Malawi Management Unit was tasked to assist the BoT in overseeing the implementation of the Compact and had the principal responsibility (subject to the direction and oversight of the BoT, and subject to MCC's rights of approval as set forth in the Compact, the Program Implementation Agreement, this Trust Deed, the Governance Guidelines and in any Supplemental Agreement) for the overall management of the implementation of the Compact. The structure of the MCA-Malawi is illustrated in **Figure 2**.

2.3 Program Partners

During the MCC Compact implementation period, MCA-Malawi received support from various government departments and parastatals on the implementation of the compact. These government agencies included the MNREM, ESCOM, EGENCO, MERA, DHRMD, NSO, the Ministry of Finance (Treasury Department), the Immigration Department and Citizenship Services, the Malawi Revenue Authority (MRA) and the Malawi Bureau of Standards.

Figure 2: MCA-Malawi Organogram



2.3.1 Ministry of Natural Resources, Energy and Mining

The Ministry of Natural Resources, Energy and Mining (MNREM) played a key role in the development and implementation of the MCC Malawi Compact given that all of the grant allocated to the Compact was fully invested in the power subsector. The role of the MNREM was critical to the implementation of the MCC Malawi Compact given its mandate in the power subsector that included the need to achieve sustained growth through the development and utilization of energy resources; provision of policy guidance and direction related to matters concerning Malawi's natural resources, energy, and environmental management; as well as strengthening regional and international cooperation in energy resource development, utilization, efficiency, and management. On September 25, 2014, the PCA between MCA-Malawi and the MNREM was signed and was later amended in July 2016 November 2017 to incorporate the tasks performed by the Department of Forestry and Environmental Affairs Department (EAD), respectively. The designated officer within the MNREM was the Principal Secretary. The MNREM PS's office also served as the Champion of all Power Sector Reforms that the Compact implemented. The key departments that interfaced with MCA-Malawi within the MNREM included the Environmental Affairs Department (EAD), the Forestry Department, and the Department of Energy Affairs (DEA).

2.3.2 Electricity Supply Corporation of Malawi

The Electricity Supply Corporation of Malawi (ESCOM) played a major role in the implementation of the Compact especially being the biggest beneficiary of Compact resources in all three projects implemented of the Compact, namely: IDP, PSRP, and ENRM. MCA-Malawi and ESCOM entered into a Program Cooperation Agreement (PCA) in May 2014, which describes key activities that ESCOM was expected to perform and the means by which MCA-Malawi supported ESCOM in performing them. An amendment to the ESCOM PCA was made on July 15, 2014 and in 2017 to include reimbursable costs to ESCOM that covered permitted direct charges for the physical demarcation of Right of Way (RoW) and wayleave for the 400 kV; for ESCOM to work on collection of GIS data to populate the ESCOM MIS. The specific works that were undertaken included confirmation of coordinates in relation to angle points, clearing of vegetation, excavation of pillar points, and construction of pillars to mark the center lines and boundaries of the wayleaves of the 400 kV Overhead Line (OHL) from Phombeya in Balaka District to Nkhoma in Lilongwe District as well as the 132 kV OHL from Chintheche in Nkhata Bay District to Bwengu in Mzimba District. The general areas of cooperation between ESCOM and MCA-Malawi were similar to those of MNREM. However, given that ESCOM was the key beneficiary of the projects implemented under the Compact, the PCA outlined specific tasks to be implemented by ESCOM under each project.

2.3.3 Electricity Generation Company

After being unbundled from ESCOM and becoming operational as an independent state company on January 1, 2017, the Electricity Generation Company (EGENCO) signed an operational agreement with MCA-Malawi in June 2017. EGENCO became a registered public company established under the Companies Act cap. 46:03 of 1998 with a mandate to generate electricity in

Malawi. Similar to ESCOM, EGENCO was tasked to assist MCA-Malawi in the implementation of its projects as well as cross-cutting issues.

2.3.4 Malawi Energy Regulatory Authority

MCA-Malawi also entered into a PCA with the Malawi Energy Regulatory Authority (MERA) on October 20, 2014. Being one of the key implementers of Compact activities, MERA played a pivotal role especially building on the Compact efforts under the Power Sector Reform Agenda (PSRA). A corporate body established as a statutory organization created under the Energy Regulatory Act No. 20 of 2004, the Electricity Act cap. 73:01 of 2004, the Rural Electrification Act cap. 73:03 of 2004, and the Liquid Fuels and Gas Act cap. 50:01 of 2004. MERA's mandate is to regulate the energy sector in Malawi through a fair, transparent, efficient and cost effective manner

2.3.5 Department of Human Resources and Management

On November 30, 2015, MCA-Malawi signed an operational agreement with the Department of Human Resource Management and Development (DHRMD) for a period of three months. The operational agreement stipulated general project support responsibilities to be undertaken by the DHRMD. These included: (i) provide a team of three management analysts or other appropriate experts within DHRMD and one driver to accomplish the assignment and develop a work plan and budget to undertake the assignment; (ii) analyze the current ESCOM structure to determine the functions and structure required to successfully establish EGENCO and the residual ESCOM; (iii) propose company structures for the new utilities to be established through the unbundling of ESCOM; (iv) prepare an implementation plan and requirements to unbundle ESCOM.

2.3.6 National Statistics Office

On April 6, 2016, MCA-Malawi signed an operational partnership with the National Statistics Office (NSO) to support MCA-Malawi evaluation activities on the three main projects implemented. The specific duties agreed under the operational agreement with NSO included the following: (i) collection of Compact related data during IHS4 and IHPS4 data collection exercise and sharing of IHS4 and IHPS4 dataset for use during Compact evaluation; (ii) incorporating electricity related questions in survey instruments for use during interim, final and impact evaluations of the Compact conducted by MCA-Malawi; and (iii) ensure the quality of all relevant performance data.

CHAPTER 3

COMPACT IMPLEMENTATION

3.1 Overview of the MCA-Malawi Compact

On April 7, 2011, MCC and the GOM signed the first Compact Agreement at the New State House in Lilongwe. The Compact Document stipulates the agreement between MCC and the GOM as relates to how the grant financing of US\$350.7 million would be utilized. The Compact Document states the goals and objectives of the Compact agreement as well as define the respective program and project objectives, and how the funds and resources will be used and disbursed. It also stipulates the GOM responsibilities; policy performance; required implementation agreements and letters; required audits; accuracy of information; termination, suspension, and expiration; and communications.

3.1.1 First Compact Amendment

On July 31, 2013, the MCC Malawi Compact was amended to incorporate changes that occurred during the development phase the time the Compact suspension was uplifted in 2012. The goal of the MCC Malawi Compact was to reduce poverty through economic growth in Malawi. The Compact also stipulates three key program objectives which are to: (i) reduce the cost of doing business in Malawi; (ii) expand access to electricity for the Malawian people and businesses; and (iii) increase value-added production in Malawi. The first and third program objectives were amended after the revisions made to the ERR model that replaced the following program objectives, respectively: (i) increase investment and employment income by raising the profitability and productivity of enterprises; and (ii) improve delivery of social services. Further amendments were made to the project objectives to align with the respective three project components that were to be implemented. The project objectives were thus amended as follows: (i) *Infrastructure Development Project* – to improve the availability, reliability, and quality of power supply by increasing the throughput capacity and stability of the national electricity grid and increasing efficiency of hydropower generation; (ii) *Power Sector Reform Project* – to create an enabling environment for future expansion of the power sector by strengthening sector institutions and enhancing regulation and governance of the sector; and (iii) *Environmental and Natural Resources Management Project* – to mitigate the growing problems of aquatic weed infestation and excessive sedimentation in the Shire River basin to reduce the costly disruptions to Malawi’s hydropower generation. Additional amendments to the language and contents set in the first amendment were also made under annexes I (program description), II (multi-year financial plan summary), III (description of the monitoring and evaluation plan, and V (definitions).

3.2 Compact Theory of Change

3.2.1 Program Logic

The MCC Compact with Malawi sought to mitigate the challenges faced in the Malawi’s power subsector through investments in infrastructure, power sector reforms, and environment and natural resources management along the Shire River basin. In the approved M&E Plan, the proposed program logic of the compact was as illustrated in **Figure 3**.

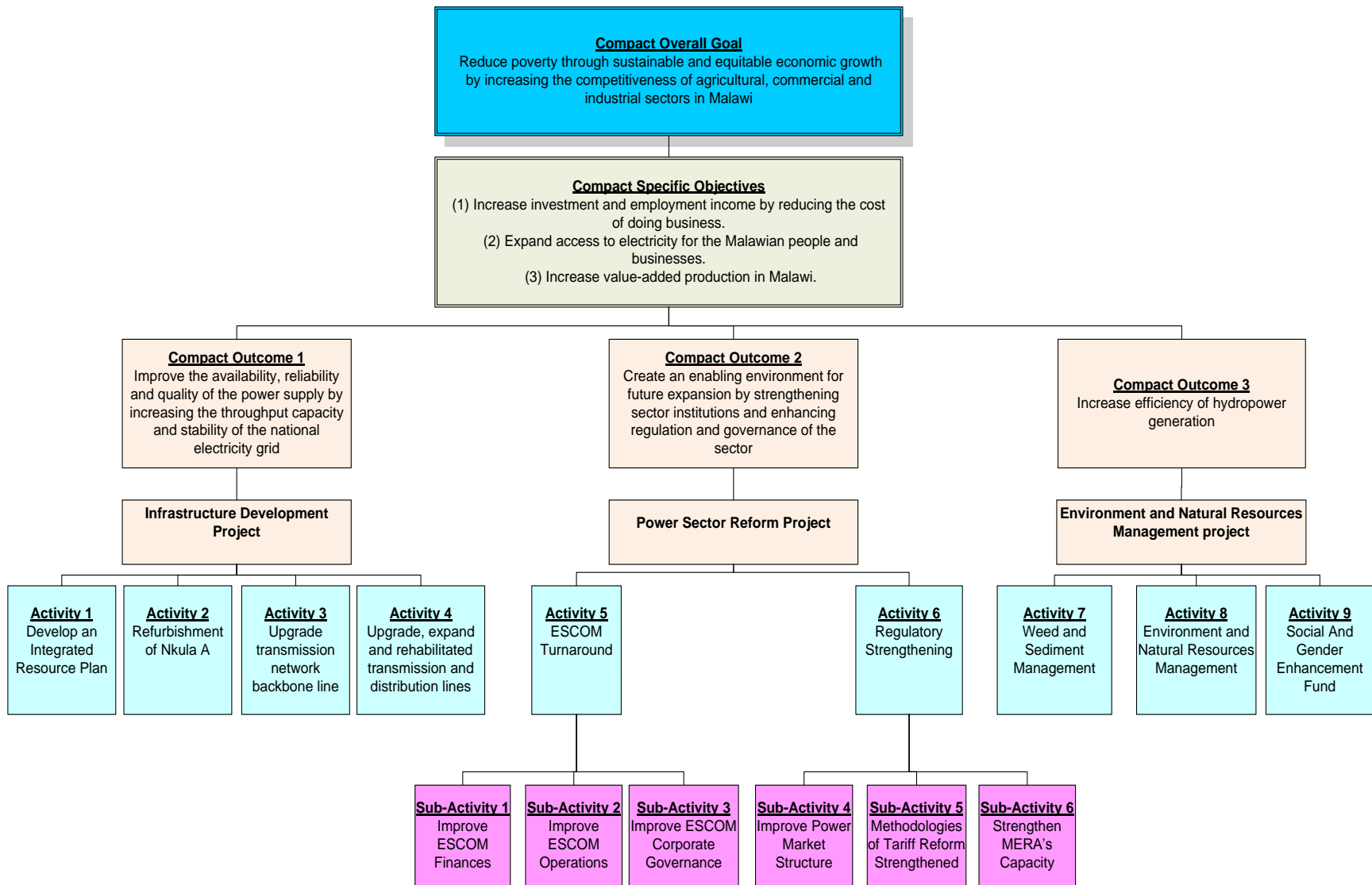


Figure 3: MCA-Malawi Approved Compact Logic

The Compact activities were clearly linked with the overall Malawi Growth and Development Strategy (MGDS) that the GOM has been implementing since 2006. Improving energy generation and supply is one of the key priority areas that the MGDS emphasizes and hence linked the Compact to one of the binding constraints facing Malawi. At the inception of the Compact, Malawi's electricity grid was in need of the urgent repair, upgrade and modernization. The maximum transmission grid that was in existence was at 132 kV which in some countries constitutes a distribution line to major high voltage industries. By bringing in key investments in the transmission grid, especially at 400 kV, the Compact modernized the electricity grid in Malawi. The 400 kV substation at Phombeya represents a strategic position where future investments that the GOM is undertaking will land specifically the Malawi-Mozambique interconnector and the Kam'mwamba Coal Fired Power Plant to be located about 30 km from the substation. Similarly, the Nkhoma 400 kV substation is also crucial for future grid expansion, particularly with regard to the development of a backbone 400 kV line that would cover the western part of Malawi from the Central Region to the Northern area, where other equally generation projects have been lined up such as the Songwe River Basin multipurpose dam, the Lower Fufu hydropower project, among others. Conversely, the Environment and Natural Resources Management Project aimed at mitigating the disruptive nature of weed infestation and excessive sedimentation in the Shire River that affected the hydropower plants. These activities also complemented the infrastructure development projects as they aimed to improve the efficiency of the hydropower plants.

3.2.2 Compact Benefits

The Compact also estimated the probable benefits that were expected to be accrued on the various projects implemented. These benefits included the following:

3.2.2.1 Technical Benefits

The Compact interventions will lead to the following technical benefits:

- (1) The investments in the transmission and distribution (T&D) backbone are expected to increase network throughput capacity from 260 MW to 960 MW.
- (2) Transmission capacity will increase from 991.5 MVA to approximately 1,661.5 MVA.
- (3) Distribution capacity will increase from 868 MVA to approximately 942 MVA.
- (4) The T&D investments through the Compact are expected to reduce system losses by 5 percentage points from an average of 22-25% to 18% by end of September 20, 2018.
- (5) Additional capacity of up to a maximum of 3-6 MW from the refurbishment of Nkula A will be added to the existing installed generation capacity.
- (6) Improved load factors for installed generation capacity (58%-78%) from weed and sediment management investments are expected to improve efficiency and water flow of hydropower stations along the Shire River (Nkula A and B; Tedzani I, II, and III; and Kapichira I and II).

3.2.2.2 Economic Benefits

The following economic benefits are envisaged to be realized through Compact interventions:

- (1) The expected net present value of benefits are estimated to range from US\$567.2 million to US\$832.0 million
- (2) The estimated economic rate of return to range from 18.7% to 24.6% in the compact implementation period with the interconnector as the potential investment to come during the compact implementation period.
- (3) An estimated total of approximately 982,729 individuals (without interconnector) to 988,915 individuals (with interconnector) are expected to benefit from the MCC investments by year 20 after Compact term as a result of increased consumption of electricity.
- (4) The magnitude of private benefits increase from US\$577 to US\$841 per beneficiary with corresponding estimated benefit-cost ratio (cost effectiveness) of 1.70 to 2.27.

3.2.2.3 Reform Benefits

The Compact interventions will lead to the following reform benefits:

- (1) Improved power sector governance, operations and service.
- (2) Improved financial performance of the power sector.
- (3) Reduced real and perceived risks in the sector.
- (4) Increased availability of Malawi to participate in regional institutions – South Africa Power Development (SAPD), Southern Africa Power Pool (SAPP), Regional Energy Regulatory Authority (RERA), and African Forum for Utility Regulators (AFUR).
- (5) Increased ability for ESCOM to participate in regional power trade.
- (6) Increased potential for private sector participation and investment in power generation, transmission and distribution.

3.3 Compact Financial Performance

3.3.1 Compact Implementation Funding (CIF)

The MCA-Malawi Fiscal Year ran from October to September. The first fiscal year of the compact was the Compact Implementation Funding (CIF) year which was expected to ran for Nine months from January 1, 2013 to September 30, 2013. The total allocated funds for CIF were US\$9,120,000.00. As per the approved MYFP, the percentage allocation for the CIF period was 3% which was almost fully committed and disbursed. **Table 1** illustrates how the CIF funds were spent.

Table 1: CIF Expenditure Analysis

(US\$)				
Component	Approved CIF	Actual CIF	Variance	% Completion
1. Infrastructure Development Project				
(a) Nkula A Refurbishment	23,187	23,187	-	100%
(b) Transmission Network Upgrade	1,735,723	1,735,723	0	100%
(c) T&D Upgrade, Expansion, and Rehabilitation	693,090	693,090	-	100%
Subtotal	2,452,000	2,452,000	0	100%
2. Power Sector Reform Project				

(US\$)				
Component	Approved CIF	Actual CIF	Variance	% Completion
(a) ESCOM Turnaround	2,552,000	1,708,960	843,040	67%
(b) Regulatory Strengthening	800,000	606,224	193,776	76%
Subtotal	3,352,000	2,315,184	1,036,816	69%
3. Environment and Natural Resources Management Project				
(a) Weed and Sediment Management	33,000	33,000	0	100%
(b) Environment and Natural Resources Management	708,000	904,330	-196,330	128%
(c) Social and Gender Enhancement	203,000	-	203,000	0%
Subtotal	944,000	937,330	6,670	99%
4. Monitoring and Evaluation				
(a) Monitoring and Evaluation	387,000	185,334	201,666	48%
Subtotal	387,000	185,334	201,666	48%
3. Program Management and Administration				
(a) MCA-Malawi Administration	1,885,000	2,725,978	-840,978	145%
(b) Financial Management and Procurement Controls	-	416,176	-416,176	0%
(c) Financial Audits	100,000	-	100,000	0%
Subtotal	1,985,000	3,142,154	-1,157,154	158%
GRAND TOTAL	9,120,000	9,032,001	87,999	99%

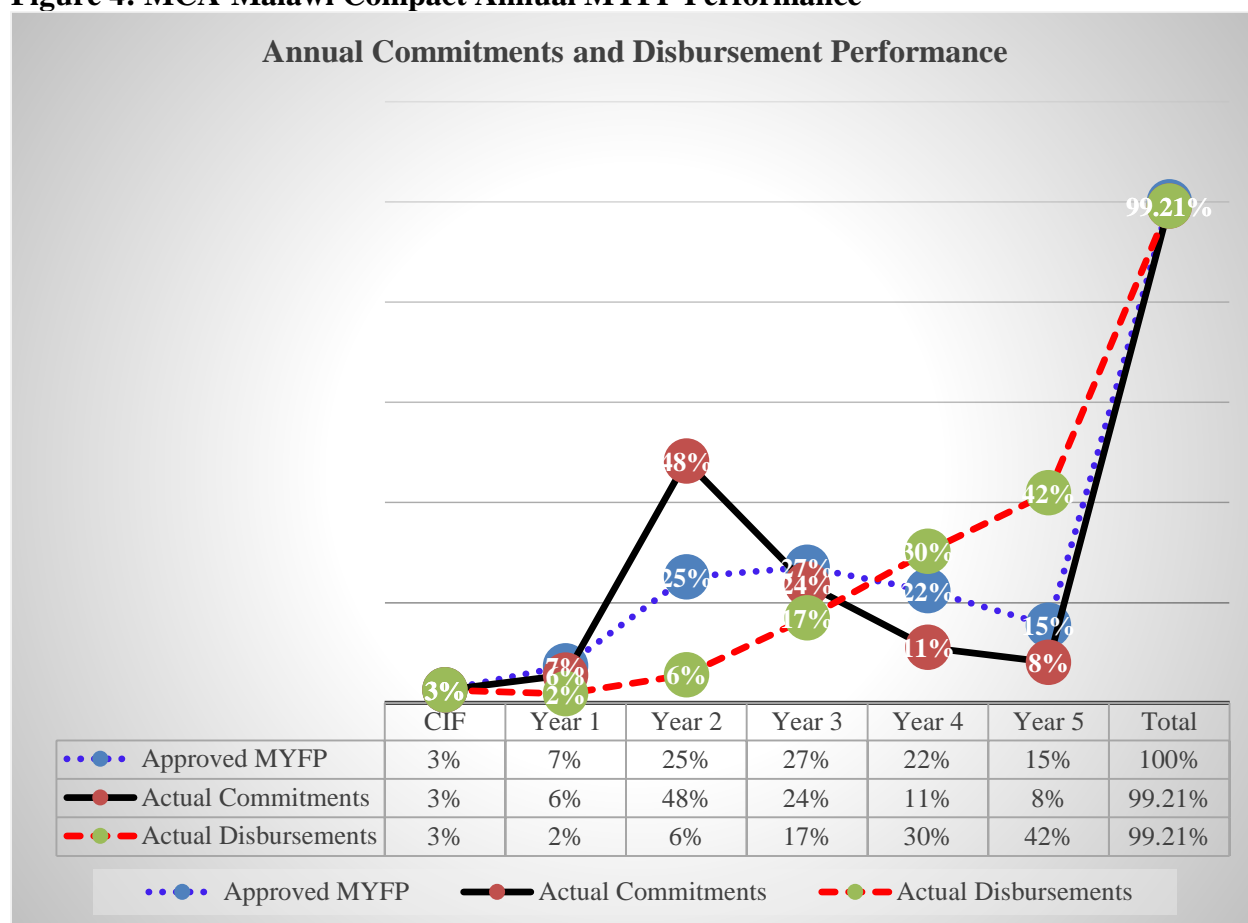
A large portion of the resources were allocated to IDP and PSRP activities. Under IDP, the resources were used to procure the services of a Consulting Engineer (CE), Fichtner GmbH and Co., while PSRP activities included hiring consultants to develop a detailed financial model (EY) for ESCOM and other related studies. Under the ENRM project, CIF was used to procure a consulting firm, LTS International to undertake studies in the Shire River basin and recommend interventions to be implemented by the Grantees and Environmental Trust. Resources spent under M&E were used to conduct a detailed Data Quality Review on all indicators that were agreed to be collected under the approved M&E Plan as well as related software for the analysis of data. Additional expenses made under CIF were for administration and finance with key activities being the procurement of office vehicles, purchase of computers and laptops for staff, development and customization of MCA-Malawi MIS using SAP, procurement of consultant to refurbish new office locations for MCA-Malawi, as well as the procurement and hiring of both the Fiscal and Procurement Agents to support MCA-Malawi as per the requirements of the CAD.

3.3.2 Compact Implementation Commitments and Disbursements

The first Fiscal Year of the Compact after entry into force commenced on October 1, 2013 through September 30, 2014. The remaining four fiscal years continued through September 20, 2018. In this section, we discuss the financial performance of each fiscal year based on what was projected to be spent and the activities that were implemented during that period. The financial performance of the Compact was based on the approved Multi-Year Financial Plan (MYFP) that was part of the signed Compact Document. In this section, we analyze commitment and disbursement performance in terms of percentage achievement on an annual and cumulative basis. **Figure 4** illustrates the annual commitments and disbursement performance. The annual performance

during compact implementation period was, however, skewed with slower progress being recorded on actual disbursements than actual commitments.

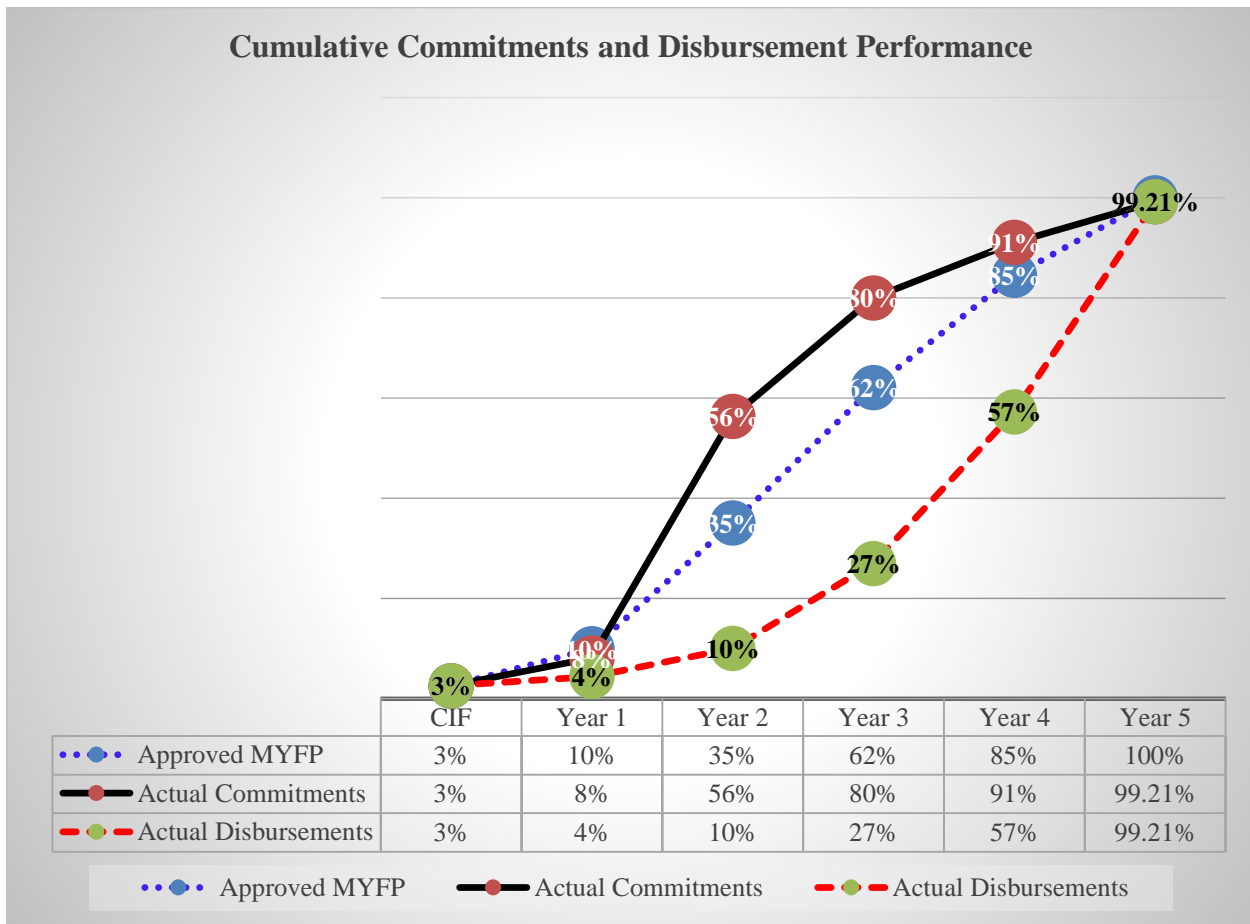
Figure 4: MCA-Malawi Compact Annual MYFP Performance



As illustrated in **Figure 4**, annual commitment performance was highly satisfactory. In the first year, with an estimated commitment rate of 7%, the Compact managed to commit 6% of the Compact resources. In the second year, the pace picked up with registered commitments of 48% against a target of 25%. In the Third year, the commitment rate dropped by 3 percentage points from the target and a similar trajectory was witnessed in Year 4 with a commitment rate of 11% achieved versus a target of 22%. In the fifth year, due to termination of some ENRM contracts, the commitment rate dropped down to 8% against a target of 15%. On the other hand, the disbursement performance was also skewed with low disbursement rates achieved at the beginning of the Compact and then picking up during the implementation period. The first two years' disbursement performance was dismal with recorded disbursement rates of 2% and 6%, respectively. In the third year, the disbursement rate almost tripled to 17% and further increased in year 4 to 30%. As of September 2018, the disbursement rate for the fifth year stood at 42%.

The cumulative performance on the other hand provides a good picture on how MCA-Malawi performed as illustrated in the **Figure 5**.

Figure 5: MCA-Malawi Cumulative MYFP Performance



As shown in **Figure 5**, the performance of commitments was impressive during the compact implementation period. Though in Year 1 total commitments stood at 8% of the approved MYFP, the commitments in Year 2 surpassed the approved MYFP cumulative target of 35% and registered a performance of 56%. The performance continued in Years 3 and 4 with commitments registering a cumulative achievement of 80% and 91% versus approved targets of 62% and 85%, respectively. As explained in the section above, the de-commitments made in Year 5 related to two key ENRM assignments reduced the commitments. In the fifth year, total commitments stood at 99.21% as of January 2019. On the other hand, the performance of disbursement has been exponential with disbursement rates picking up in Years 3 and 4 at a cumulative rate of 27% and 57%, respectively. As of January 2019, the disbursement rate stood at 99.21% of compact funding. Out of the allocated grant of US\$350.7 million, this implies only 0.8% of compact funding was returned to MCC.

3.3.3 Other Contributions

The Compact also benefited from two sources of funds in support of other activities. The first contribution was from GOM that came from Other Recurrent Transactions (ORT). The second contribution came from ESCOM in January 2016 when they agreed to co-finance the cost of Nkula A rehabilitation. The MCA-Malawi Nkula A refurbishment contract with Andritz and Mota Engil

was over budget with an estimated cost of US\$44,932,000.00. Out of these funds, ESCOM contributed US\$12,097,000.00. Their contribution was made in two parts: a lump sum amount to the tune of US\$3,025,000.00 paid in January 2016 and eight quarterly payments with an agreed amount of US\$1,134,000.00 commencing in March 2016. ESCOM's contribution in Malawi Kwacha values varied per quarter due to exchange rate differences but ESCOM were able to honor their contribution in dollar terms. As of December 2017, ESCOM had contributed a total of MWK8.005 billion (or US\$10,963,000.00) and no further installments were made. The ESCOM funds were used largely to honor invoices from the Nkula A contractor as of October 2018, MCA-Malawi had disbursed US\$10,360,271.34 to the contractor as co-financing.

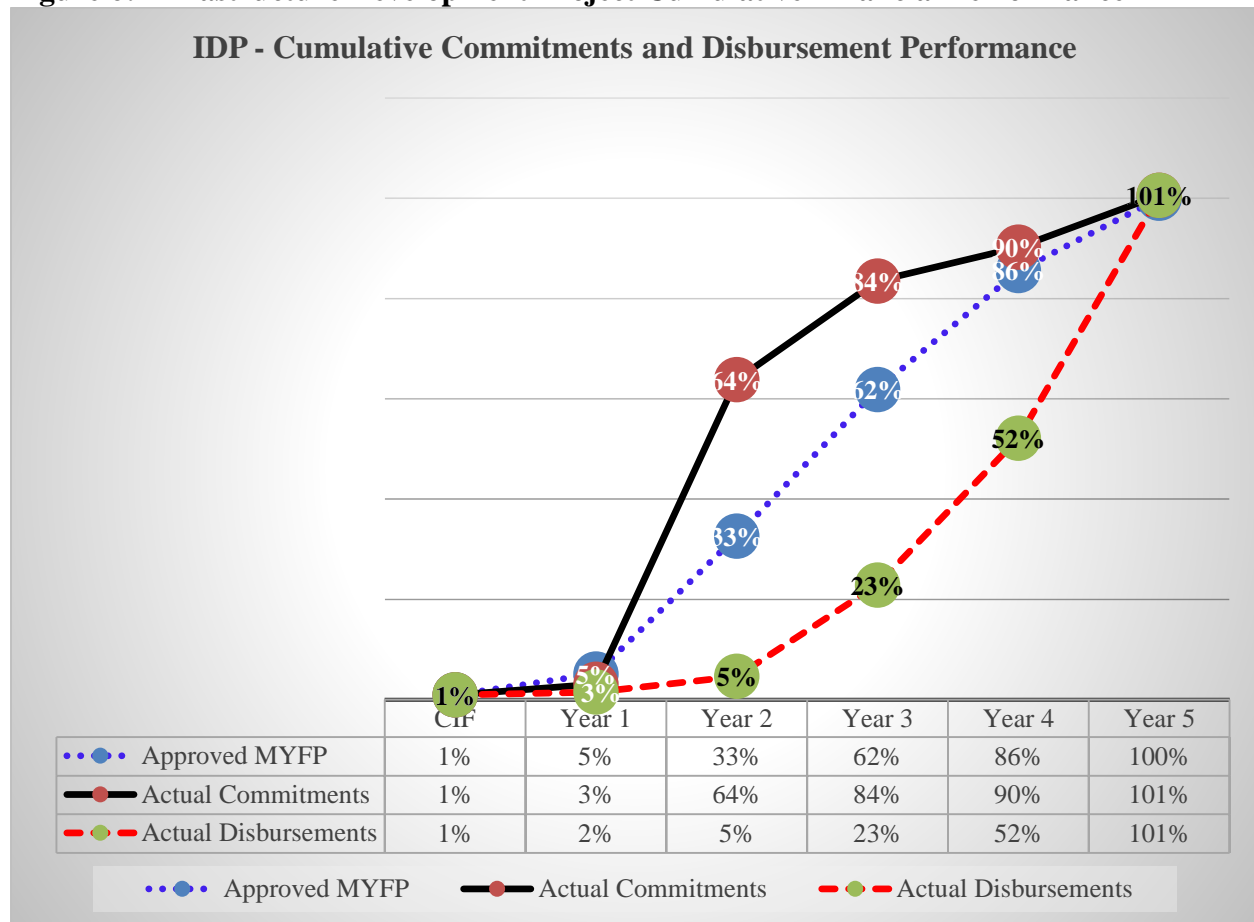
3.4 Progress Achieved during Compact Implementation (by Project)

3.4.1 Infrastructure Development Project

Infrastructure Development Project (IDP) implemented twenty seven contracts of which eight were major contracts. These included (1) aimed at rehabilitation, modernization and increasing generation capacity of Nkula A Hydro Power Plant from 24 MW to 36 MW and the other seven (7) contracts aimed at rehabilitation, expansion and strengthening of the electrical grid with an increased throughput capacity of up to 960MW. Of the 27 contracts under IDP, one was related to the supervision of works; and the other 17 related to the implementation of the Resettlement Action Plans (RAPs) ; one related RAP implementation by SMEC; one related to Payment Agent by CARDNO; seven related to construction and supervision of houses for in-kind compensation that constructed 207 houses for people along the corridors of transmission and distribution lines and substations; six related to fruit tree procurement for Northern Region; two related to fruit tree procurement for North, South and Centre; and the last one related to RAP Audit (2017-2018). The Infrastructure Development Project's main objective was to rehabilitate, upgrade and modernize ESCOM's generation, transmission and distribution assets in the most urgent need of repair, in order to preserve existing generation, improve the capacity of the transmission system and increase the efficiency and sustainability of hydropower generation. **Figure 6** illustrates both the cumulative commitment and disbursement performance for the IDP.

As illustrated in **Figure 6**, the performance of commitments versus the MYFP for IDP was satisfactory with major procurements being committed in the second and third years of Compact implementation, representing a cumulative performance of 84%. In terms of disbursement performance, the major ones picked up in the third year, more than doubled in the fourth year and peaked in the fifth year of compact implementation with an overall success rate of 101%. The overachievement under the IDP component was due to MCC's reimbursement of ESCOM's contribution towards the refurbishment of Nkula A HPP. The performance of both commitments and disbursements are thus highly satisfactory.

Figure 6: Infrastructure Development Project Cumulative Financial Performance



Four main activities were implemented under the IDP and are discussed in the following sections. These include the Integrated Resource Plan activity; the refurbishment of Nkula A; the transmission network upgrade activity; and the transmission and distribution upgrade, expansion, and rehabilitation activity.

3.4.1.1 Integrated Resource Plan Activity

The objective of the IRP was to identify a prioritized list of generation resources that can help the GOM and ESCOM meet increasing demands for power in a manner that balanced the objective of *least or low cost power* to users and diversification of energy sources, and to increase the impact of the Project. The aim of the IRP was to integrate and optimize information provided by stakeholders from both the demand and supply side in order to meet Malawi’s future electricity needs. From the demand side, the main focus was on assessing the future demand for electricity from a regional and customer level with emphasis on conservation and demand side management options (through lighting efficiency, time of use pricing for large customers, ripple control of hot water geysers, and use of solar water heaters), off-grid generation, and future step loads from mining, and urbanization. From the supply side, the IRP considered available and potential generation options from either hydropower, other renewables (solar, wind, geothermal, etc.), regional power trading, thermal options (coal, gas, etc.). The IRP also looked at supply side options where the power market would co-exist with an integrated system that would allow new entrants

into the power market from Independent Power Producers (IPP). Other important supply side options considered in the IRP included the transmission grid requirements both local and international through interconnection that would facilitate the export and import of power and energy as well as network management in times of low water levels or excess demand periods.

3.4.1.2 Nkula A Refurbishment Activity

On September 29, 2015, MCA-Malawi signed a contract with Andritz Hydro GmbH and Mota-Engil as a joint venture to refurbish the Nkula A hydropower plant with an estimated contract price of US\$44,932,156.00. The agreed works included refurbishment of electromechanical equipment and hydraulic steel structures; civil works and mechanical works; refurbishment of generator and excitation system, refurbishment of high voltage equipment at 66 kV switchyard including medium and low voltage equipment, control and protection equipment and hydraulic steel structures. Out of this contract amount, MCA-Malawi agreed with ESCOM that US\$12,097,000.00 will be covered by the Utility while US\$32,835,156.00 was paid using Compact resources. To date, with contract variations, the total contribution of MCC to the project was US\$39,167,615.24. Further benefits of the Nkula A rehabilitation included the uprating of the generators from 8 MW to 12 MW, and thus a total increase in generation capacity from 24 MW to 36 MW. All works were completed before September 2018 and the Nkula A HPP was officially handed over to EGENCO by the President of Malawi on October 31, 2018. All activities under this contract were completed satisfactory.

3.4.1.3 Transmission Network Upgrade Activity

The Transmission Network Upgrade interventions included the construction of Greenfield substations as well as OHL at 400 kV, 132 kV, and 66 kV. In total, 367 kms of OHL lines was targeted and have been fully completed.

3.4.1.3.1 Lot 1A – 400 kV OHL – Phombeya to Nkhoma

Under this activity, the contract was awarded to Kalpataru Power Transmission Limited on September 29, 2018 to construct a 173 km 400 kV OHL from Phombeya in Balaka to Nkhoma in Lilongwe, with an initial contract value of US\$30,918,073.33. An amendment to the contract with cost was agreed between the contractor and MCA-Malawi that increased the contract value by US\$880,970.15, bringing the total contract value to US\$31,801,643.52. The key activities implemented included design works which were completed on October 24, 2017; delivery of materials to site completed on November 30, 2017; completion of civil works on March 13, 2018; erection of steel structures on June 15, 2018; stringing of conductor, OPGW, earth wire, and sagging on June 15, 2018; and commissioning of 400 kV OHL on July 10, 2018. All required equipment and works were satisfactory completed.

3.4.1.3.2 Lot 1B – 400 kV Substations – Phombeya and Nkhoma

This contract was awarded to Larsen and Toubro (L&T) Limited on September 29, 2015 with a contract value of US\$34,150,261.00. Under this contract, L&T constructed two 400/132 kV substations at Phombeya in Balaka, the takeoff point for the 400 kV OHL constructed by Kalpataru

Power Transmission Limited, and Nkhoma 400/132 kV substation, which is the landing point of the 400 kV OHL. Several amendments to the L&T contract were effected amounting to US\$7,083,716.00. The key activities implemented in the two 400/132 kV substations included the delivery of materials to site that was completed in March 2018; earthworks (cutting and filling) which were completed in January 2018; construction of control buildings completed in May 2018; installation of control panels (including earthing and cable trenches) completed in May 2018; erection of steel structures completed in June 2018; and installation of High Voltage (HV) equipment (drainage system, cabling and connections) completed in March 2018; and construction of roads to the substation completed in June 2018. The energization of the 400 kV substations was done in October 2018. All agreed equipment and works were completed as planned.

Lot 2A – 132 kV and 66 kV OHL

This contract was also awarded to Kalpataru Power Transmission Limited and involved the construction of the following overhead lines:

- (1) 132 kV OHL from Chitheche substation to New Bwengu substation via Luwinga substation;
- (2) 132 kV OHL from Nkhoma substation to Bunda Turnoff substation;
- (3) 66 kV OHL Lilongwe ring comprising of:
 - a. 66 kV OHL from Lilongwe A substation to Area 48 substation;
 - b. 66 kV OHL from Area 48 substation to Lilongwe B substation;
 - c. 66 kV OHL from Lilongwe B substation to Lilongwe C substation via New Area 43 substation; and
 - d. 66 kV OHL from New Bwengu substation to Old Bwengu substation.
- (4) Looping in and looping (L.I.L.O) out of 132 kV and 66 kV lines at the following:
 - a. L.I.L.O at Phombeya D/C of 132 kV OHL;
 - b. L.I.L.O at Phombeya S/C of 132 kV OHL;
 - c. L.I.L.O at Nkhoma D/C of 132 kV OHL;
 - d. L.I.L.O at Kauma S/C of 132 kV OHL; and
 - e. L.I.L.O of Lilongwe A-Dedza-Bunda Turnoff 66 kV OHL.

The total contract value for the proposed works was US\$22,978,682.44 and was signed on September 29, 2015. Throughout the implementation period, the contract went through a number of amendments amounting to US\$2,539,449.10 and an overall contract value of US\$25,518,131.54. In terms of progress, all equipment and works were completed satisfactorily under this lot. All works except for the 66 kV OHL Lilongwe ring were completed before CED. These works and all necessary test are to be completed by October 30, 2018.

3.4.1.3.3 Lot 2b – 132/66 kV and 132/33 kV Substations

On September 24, 2015, MCA-Malawi signed a contract agreement with Chint Electric Company Limited worth US\$15,596,737.74 for the construction of new high voltage substations and refurbishment or uprating of existing ones. The projects included the refurbishment of Chitheche substation located in the northern part of Malawi; uprating and extension of Luwinga substation; construction of a new Bwengu substation; and uprating and extension of Bunda Turnoff substation.

Additional amendments to the Chint contract were made during the compact implementation period amounting to US\$609,436.27, with a final contract amount of US\$1,206,174.01. In terms of progress, equipment and works were fully executed by Chint and all activities were implemented satisfactory. All four substations were completed and commissioned in June 2018.

3.4.1.4 Transmission and Distribution Network Upgrade, Expansion and Rehabilitation Activity

Under this activity, the interventions implemented covered all three ESCOM regions, namely: Northern Electricity Supply (NES), Central Electricity Supply (CES), and Southern Electricity Supply (SES) regions. The key activities implemented included the following:

- (1) Up-rating of existing network connections (33 kV and 11 kV);
- (2) Extension of existing substations (including 66 kV);
- (3) Up-rating of transformers in existing substations;
- (4) Construction of new substations;
- (5) Installation of improved protection systems;
- (6) Provision of network extensions and connections; and
- (7) Installation of new controls and communication systems (SCADA).

Under the T&D activity, MCA-Malawi implemented three contracts under Package 3, Lots 1 and 2, and Lot 5 – SCADA. A total 33 kV and 11 kV OHL were estimated at 45.19 kms and were constructed, representing 100% achievement.

3.4.1.4.1 Package 3 Lot 1

On February 12, 2016, MCA-Malawi signed a contract with Consolidated Power projects Pty Limited (CONCO) to refurbish, extend and uprate distribution substations and OHL in the Northern and Central Electricity Supply regions in Malawi. Tables 32 and 33 illustrate the completion dates for projects under Package 3 Lot 1. The contract price was US\$11,247,676.38 and included the following projects: construction of Greenfield projects at Area 25, New City Centre, Kang’oma, and Sonda substations; refurbishment, extension and uprating of Lilongwe B, Lilongwe C, Area 33, Karonga, and Old Bwengu substations; construction of OHL from Area 33 substation to New City Centre substation, New City Centre substation to Lilongwe C substation, Lilongwe B substation to New Area 25 substation, Telegraph Hill substation to New Katoto substation, New Katoto substation to New Sonda substation, New Sonda substation to Luwinda substation, Old Bwengu substation to Phwezi, and Karonga substation to Songwe Turn-off. Amendments Area 33 substation to New City Centre substation to the CONCO contract were also made to implement additional activities with amendments worth US\$2,805,595.56. The total contract amount thus increased to US\$14,053,271.94. All deliverables under Package 3 Lot 1 were completed satisfactory before CED except the following:

- New Sonda substation to Luwinda substation;
- Area 33 substation to New City Centre substation;
- Kang’oma Substation;
- L.I.L.O Kang’oma Substation S/C of 66 kV OHL; and

- Karonga substation to Songwe Turn-off.

These activities were fully completed by November 19, 2018.

3.4.1.4.2 Package 3 Lot 2

To cover distribution projects in the Southern Region, MCA-Malawi signed a contract agreement with Larsen and Toubro (L&T) Limited for the refurbishment, uprating and laying of 11 kV underground cables on June 29, 2016 worth US\$8,968,042.85. This contract covered 10 distribution substations in the south as follows: Blantyre Main, David Whitehead, Limbe A, Limbe B, Thyolo A, Thyolo B, New Ntonda (Greenfield), Zomba, Liwonde, and Maldeco substations. The underground cables to be installed were done in Blantyre and Zomba. All equipment and works were completed satisfactory.

3.4.1.4.3 Lot 5 - SCADA

On July 3, 2015, MCA-Malawi signed a contract agreement with Alstom GE Grid Solutions worth US\$7,472,648.48 for the design, supply, installation and commissioning of SCADA/EMS and telecommunication systems. Originally, the contract covered only 13 transmission substations and was later extended to cover 26 transmission substations with an amended contract amount of US\$10,513,008.70. The 26 transmission substation included the following: Nkula A & B, Tedzani I & II, Tedzani III, Kapichira, Chichiri, Chigumula, Blantyre West, Mapanga, Nchalo, Phombeya, Lilongwe A, Lilongwe B, Lilongwe C, Bunda Turnoff, New Kang'oma, Nkhoma, Ntunthama, Golomoti, Salima, Nkhotakota, Chintcheche, Telegraph Hill, New Luwingu, New Bwengu, Old Bwengu, and Karonga substations.

In terms of progress, all twenty-six (26) substations, which include six (6) new transmission substations constructed under the MCA-Malawi compact, were integrated into the E-terra SCADA/EMS at the National Control Centre (NCC) under ESCOM. As part of the tests following completion of installation, the SCADA/EMS system will be subjected to an Availability Test for a continuous 90-day period. Only when the system availability for the 90-day period is determined to be satisfactory will the project be considered successfully completed and an operational acceptance certificate issued. The contract with Alstom Grid allows issuance of partial operational acceptance certificates in case GE -Alstom completes the works including availability test for the existing ESCOM substations, before the various IDP Lots works are ready for SCADA and Telecommunication-related works.

Current site acceptance tests were carried out for the 16 completed substations which include Nkula B hydropower station. The first partial operational acceptance 90 days availability test commenced on June 4, 2018 and was on September 2, 2018. A critical analysis of the system by the CE, ESCOM and MCA-Malawi has indicated that full handover of the system shall take place upon achieving full operational acceptance. The availability of the remaining substations shall be against a bond in the name of ESCOM. This therefore means that ESCOM will only be responsible for meeting the costs of the Engineer's supervision costs for these works after Compact End Date (CED). Overall, all equipment and works were satisfactory completed by the Contractor.

3.4.1.5 Resettlement Action Plan

3.4.1.5.1 Consulting Services

On June 14, 2014, MCA-Malawi signed a contract with Snowy Mountains Engineering Company (SMEC) International Private Limited valued at \$2,364,175.00 to prepare site specific Resettlement Action Plans (RAPs) or Livelihood Restoration Plans (LRPs) for the IDP. Under the base period contract, SMEC was responsible for the following activities: (i) initial scoping and early resettlement planning; (ii) estimate compensation, benefits and asset valuation framework; (iii) conduct community consultations; (iv) conduct census, socioeconomic survey, asset valuation, and establish cut-off date; (v) identify resettlement and livelihood restoration measures; (vi) prepare database and videography; (vii) conduct asset valuation and obtain signed compensation documents; (viii) develop grievance redress mechanism; (ix) develop a monitoring and evaluation framework for RAP/LRP; (x) prepare RAP/LRP implementation plan; and (xi) finalize and submit the RAP/LRP.

The option period of the base period subject to satisfactory performance of the contractor was to implement the RAP/LRP to both MCC's and MCA-Malawi's satisfaction and was signed on October 23, 2015 with an agreed contract value of US\$2,980,848.00. The second option period was signed on August 16, 2016 with an agreed contract price of US\$3,198,326.00. The second option period value was further increased by US\$69,997.00 to cover costs of additional scope of works for Nkhoma and New Bwengu substations access roads. The overall second option period contract was, therefore, increased to US\$3,268,323.00. The full contract value for SMEC that covered the base period and the two option periods was US\$8,613,346.00.

A resettlement audit carried by RAP Auditor EOH has revealed that there were a lot of discrepancies in the way compensations were done by SMEC. In some cases, some PAPs were over paid while in certain cases PAPs were underpaid. The exercise of confirming overpayments and underpayments is being marred by inadequate documentation of PAP files. The audit exercise to determine over/under payments has been ongoing.

3.4.1.5.2 Compensation of Project Affected Persons

As part of the SMEC contract, all compensations made under the RAP/LRP were paid separately by MCA-Malawi. Since 2014, a total of 8,815 Project Affected Persons (PAPs) were registered to be compensated. 8,524 PAPs were compensated while 291 are yet to be paid out of 8,815. Of the unpaid PAPs, only 55 were missing with an estimated value of US\$12,820.37. MCA-Malawi (MMD) will retain PAP files for about one year and later hand over to ESCOM. The list of names of missing PAPs will be handed over to ESCOM and district councils who will manage all grievances after compact closure. To support the implementation of payments to PAPs the Fiscal Agent, Cardno Emerging Markets, was tasked to oversee this project. The total commitments under this contract for the payment agent amounted to US\$1,795,554.55 these were estimated to cover the compensation of up to 9,000 PAPs.

3.4.1.5.3 Livelihood Restoration Plan

MCA-Malawi engaged several Training Service Providers to train critically impacted PAPs for various livelihood restoration activities. About 950 PAPs were identified and trained in business development and management skills by Community Savings and Investment Promotion (COMSIP). Other PAPs were trained in hawking by Small Medium Enterprises Development Institute (SMEDI); horticulture, irrigation and apiculture training was provided by Lilongwe University of Agriculture and Natural Resources- Natural Resources College (LUANAR-NRC); technical skills such as operating a hairdressing salon, tailoring, brick-laying and bakery by Technical, Entrepreneurial and Vocational Education and Training Authority (TEVETA); and SANWECKA who provided training skills in home gadget and cell phone repair. The PAPs were provided with startup capital inputs to get them started. Further, some PAPs who lost fruit trees were compensated five fruit tree seedlings for every lost fruit tree. All logistics for the trainings were handled by SMEC.

3.4.1.5.4 In Kind Compensations

For PAPs whose dwelling structures were displaced in the wayleave, MCA-M either provided monetary compensations for the PAPs to construct their own houses, or engaged a contractor to construct the PAP a replacement house. A total of 340 structures were constructed comprising of 206 IDIQ houses and 134 own construction structures. The IDIQ works were constructed by four companies namely DIKA, Primo Construction Company, Mark Construction and DBM-M&J Joint Venture Construction Company under the supervision Consultant- Image Designs.

3.4.1.6 Consulting and Supervision of Works

On October 3, 2013, MCA-Malawi signed a contract agreement with Fichtner GmbH & Co. to undertake consulting engineering services with a base period value of US\$6,050,124.00. The base period contract went through a number of amendments as follows: (i) amendment 3 signed on August 2, 2014 to incorporate additional scope of work for Nkula A rehabilitation worth US\$36,740.00; (ii) amendment 4 signed on November 24, 2014 to include additional scope of work for the preparation of tender documents for feeder metering worth US\$97,806.00; (iii) amendment 5 signed on December 18, 2014 for additional scope of works to cover staffing requirements. The total value of the base period contract was thus US\$6,184,670.00.

The main objective of the contract was for Fichtner to: (i) conduct field work and surveys; (ii) complete project designs and develop detailed technical and performance specifications, including clearly worded and contractually enforceable clauses related to site access (based on the timing of implementation of RAPs) and required environmental, health, social, and gender mitigation measures for inclusion in project tender documents; (iii) identify and develop site-specific Environmental and Social Impact Assessments (ESIAs) and/or Environmental and Social Management Plans (ESMPs) for each contract package or otherwise agreed to by MCA-Malawi, a Hazardous Materials and Waste Management Plan (HMWMP), and Environment and Social Management Manual (ESMM), and a Health and Safety Management Manual (HSMM); (iv) assist MCA-Malawi throughout the procurement processes and bid evaluations with procurements

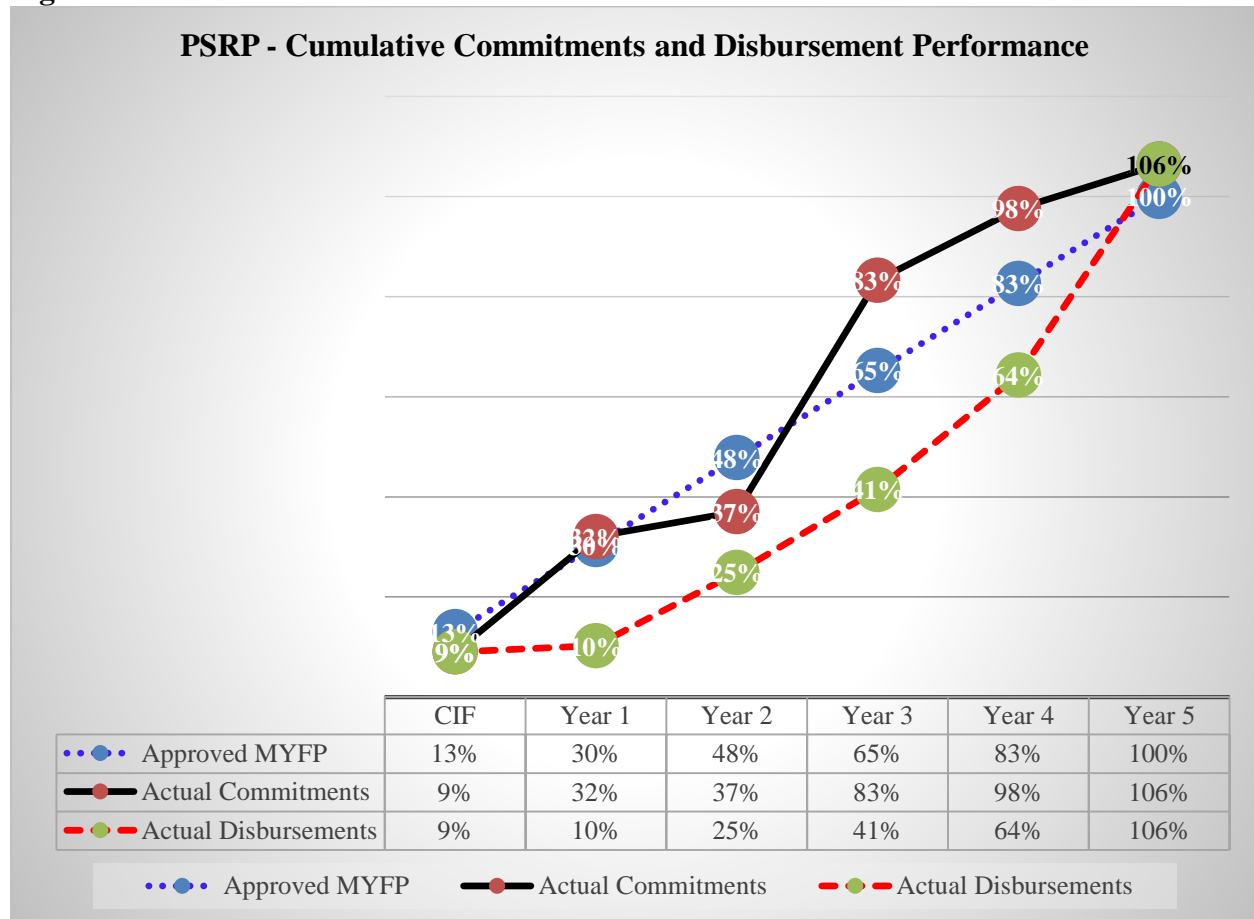
handled by the MCA-Malawi procurement agent; and (v) assist GOM, through ESCOM in its areas of responsibility, to prepare a long-term investment plan.

The option period was signed in December 2014 for the Consulting Engineer (CE) to supervise the works under the IDP with an agreed contract sum of US\$18,735,585.00. This contract value has also undergone a number of amendments to add additional scope of works. The total contract value for this contract was \$29,687,225.41 and all activities by the CE were fully implemented. The remaining activities are expected to be implemented post-compact since the CE will be responsible for supervising IDP activities during the Defects Notification Period (DNP).

3.4.2 Power Sector Reform Project

The Power Sector Reform Project (PSRP) complemented the IDP by providing support to Government’s policy reform agenda and building capacity in pivotal sector institutions such as ESCOM, EGENCO, MERA, and MNREM. The PSRP component consisted of two activities: the ESCOM Turnaround Activity and the Regulatory Strengthening Activity. **Figure 7** illustrates the financial performance of the PSRP during CIF and Compact Implementation period.

Figure 7: PSRP Commitments and Disbursement Performance



The performance of the PSRP both in terms of commitments and disbursements has been satisfactory owing to the fact that a number of consultancies were committed during CIF with key deliverables being mostly submitted on the agreed dates: thus, a fairly upward trend was realized for both commitments and disbursements during the compact implementation period. Also owing to the number of reforms implemented, the PSRP component exceeded its budget allocation by over 6% of compact funding, mostly benefiting from savings realized under the ENRM component of the compact.

3.4.2.1 ESCOM Turnaround Activity

3.4.2.1.1 ESCOM Finances

1. Ernst-Young

Ernst-Young (EY) had two contracts with MCA-Malawi to undertake the following tasks:

- Develop a Detailed Financial Model (DFM), and
- Undertake quarterly and annual financial reviews of ESCOM finances,
- Assist ESCOM in the development of a Financial Plan.
- Conduct training for ESCOM management on the DFM.

In terms of progress all the tasks were completed by the Consultant with only one deliverable that was de-scoped under Task 8 the development of SYSPRO for capital Work-in-Progress and fixed asset review. The performance of this contract as well as the planned deliverables are thus considered to be satisfactory.

2. Azorom – Financial Turnaround Team

On September 25, 2014, MCA-Malawi signed a contract agreement with Azorom Limited with specific deliverables related to development of project management documents (project charter, project governance structure, and project work plans); financial strengthening (revised policy processes and procedures to strengthen financial and cash management, auditing and verification process, fixed asset register report, business planning and budgeting process manual, and training); operational improvements (non-technical loss reduction report, technical loss reduction study, asset management strategy, preventive maintenance plan for four year period broken into annual plans, demand side management and energy efficiency strategy and implementation roadmap, system planning report, protection and stability analysis training, human resources report with recommended improvements to records, policies and procedures, and human resources systems and initiatives); mentoring focusing on mentoring management tools and techniques; and corporate governance strengthening (code of conduct of the Board of Directors, communications strategy, social and corporate responsibility strategy, procedures on reporting operating results, and disclosure policy).

The Azorom contract with MCA-Malawi was based on the completion of important tasks agreed under PSRP and was crosscutting. The general tasks as stipulated in the CAD included the following:

- Deployment of a Financial Turnaround Team;

- Implement a Non-Technical Loss Reduction (NTRL) study and develop a Strategy to address the challenges;
- Rapid Billings and Collections Improvement (RBCI);
- Strengthening of ESCOM Internal Controls (IC);
- The development of ESCOM's annual maintenance plan; and
- Fixed Asset Mapping.
- Mentoring Arrangements

Azorom implemented five key activities to support the improvement of ESCOM corporate governance. The key activities implemented included the following.

- Code of Conduct for the Board.
- Communication strategy.
- Social and Corporate Responsibility strategy.
- Procedures on reporting operational results.
- Disclosure policy

The initial contract value was US\$2,342,150.00. Depending on the studies and activities to be implemented, the contract value increased to US\$3,312,464.50. The performance of the Azorom contract is rated satisfactory.

3. New Automated Management Information System

MCA-Malawi engaged two consultants: the first consultant, AH Consulting, was responsible for the system design and supervision of the implementation of the ESCOM Management Information System (EMIS), while the second consultant, Indra Sistemas, was responsible for the development and implementation process of the EMIS. The Indra Sistemas contract was signed on September 26, 2016 with two options: the first option was for the supply, installation and implementation of an EMIS worth US\$8,809,946.64 and a second option for support and maintenance valued at US\$2,880,701.50. The second option was exercised in September 2018 after all the deliverables of the first contract were fully signed off by ESCOM. The final contract amendment to the Indra Sistemas contract increased to US\$11,100,530.00, representing an increase of 25.9%. The EMIS is a state of the art MIS that has the capabilities of an Enterprise Resource Planning (ERP) system with key modules such as budgeting, payables, cashbook, general ledger, accounts receivable, asset management, procurement, inventory management, human resource and payroll, project management; business operation applications (revenue management and billing, incident management, network equipment management, equipment maintenance, fleet management, work order management, workforce management, GIS, customer services management, energy accounting control and losses); business support applications (audit management, risk management, document management, event/task scheduling, miscellaneous records maintenance, business intelligence); and ICT requirements (standards and performance requirements, local area network and wide area networks, network security, network management, data migration, database management, system software, hardware, portable data centres, and ITIL implementation). The performance of AH Consulting is rated exceptional where the performance of Indra is rated as satisfactory.

3.4.2.1.2 ESCOM Corporate Governance Interventions

1. Azorom Contract

The activities implemented by Azorom related to ESCOM corporate governance are described in section 3.5.3.1.1.

2. Technical Assistance on Corporate Governance Standards

This activity was implemented by Tetra Tech and the contract was signed on February 17, 2017 with a contract value of US\$260,500.00. The main objective of the assignment was to undertake a corporate benchmarking study for ESCOM and EGENCO with the goal of providing the utilities with information related to the current state of corporate governance in reference to other comparator utilities or State Owned Enterprises (SOEs) as well as recommendations on how to strengthen good corporate practices, support decision makers to establish corporate governance practices that strengthen the effective oversight of their operations and strategic development. Specifically, Tetra Tech's assignment was threefold: (i) analyze ESCOM's practices and operating environment; (ii) identify best practices in corporate governance and rationale for improvement; and (iii) develop corporate governance benchmarks and benchmarking tools; (iv) assess ESCOM performance on corporate governance; and (v) make recommendations to track and improve corporate governance performance. The Tetra Tech contract was thus implemented satisfactorily and all tasks were completed.

3. Annual Performance and Procurement Audit – Feedback Infra and Graham Carr

On June 2, 2015, MCA-Malawi signed a contract with Feedback Infra Private Limited to undertake annual performance reviews on ESCOM for a base period (FY2013-2014) and two option periods based on the performance of the base period to cover ESCOM FY2014-2015 and FY2015-2016 respectively. The main objective of the consultancy was to evaluate ESCOM's efficiency and efficacy in areas of procurement, management and operational performance with a broad focus on processes, procedures, controls, and policies used to ensure efficient and effective operations by the utility. The performance of Feedback Infra Private Limited contract is rated satisfactory as all the planned deliverables were implemented.

4. Social and Gender Institutional Audit – Individual Consultant

On June 2, 2014, MCA-Malawi signed a contract agreement with Dr. Maureen Leah Chirwa to undertake the following assessment in ESCOM.

- a) Assess the extent to which ESCOM integrates social and gender perspective in key aspects of its operations (policy formulation, planning and development, transmission, distribution and customer services, human resources management, information and communication;
- b) Ascertain the level of staff understanding of social and gender mainstreaming and related issues, promote the learning of individual staff, divisions, working groups, management, and the whole organization;
- c) Establish a baseline for all social and gender appreciation of management and staff of ESCOM and focal areas of concern;

- d) Identify strengths and weaknesses, gaps, challenges, and opportunities for effective social and gender integration within ESCOM;
- e) Define ways of addressing the gaps and challenges;
- f) Propose modifications and improvements for ESCOM to carry out effective social and gender integration;
- g) Make recommendations to MCA-Malawi for greater social and gender integration into Compact-funded activities implemented by ESCOM; and
- h) Identify any other key assessment areas and specific assessment questions, as well as any proposed tools or planned activities.

All activities under this contract were implemented successfully, and Dr. Chirwa's performance is rated satisfactory.

3.4.2.1.3 ESCOM Operations

1. Development of Updated Organizational Design – Fichtner

On July 25, 2018, MCA-Malawi signed a contract agreement with Fichtner GmbH & Co. to undertake an organizational review and develop a transitional organizational structure for ESCOM. The signed contract amount was US\$430,380.00 with the following specific activities implemented: (i) develop and implement a rational organizational structure for ESCOM that ensures delivery of results such as implementation of donor-funded projects, improving operational efficiency, increasing financial controls, improving the ICT environment, professionalizing the workforce, and ensuring accountability and transparency to ESCOM's internal and external operations. The Fichtner contract with MCA-Malawi was thus implemented satisfactorily.

2. Support to Procurement Division and Strengthening of Internal Control Environment – Cardno Emerging Markets

On June 18, 2014, MCA-Malawi signed a contract agreement with Cardno Emerging Markets USA Limited to provide procurement oversight and advisory services to ESCOM with a contract value of US\$1,510,330.99. The specific objectives of this agreement included: (i) review and development of procurement systems and procedures with the aim of improving ESCOM's procurement functions, improvement of existing and/or development of new policies and procedures to strengthen the internal control environment; (ii) identify procurement capacity gaps within ESCOM, develop procurement capacity in core skill areas throughout the procurement process, and ensure that ESCOM procurement professionals and other ESCOM staff who rely on ESCOM's procurement function to accomplish their work benefit from a comprehensive, well-structured procurement training program covering GOM public procurement law and public procurement desk instructions developed by ODPP; (iii) undertake implementation support of ESCOM procurement systems and procedures by designing and implementing a plan of action/work plan that enables and ensures that ESCOM procurement unit has the information, tools and staff capabilities to execute all relevant procurement tasks; (iv) conduct monitoring and oversight of procurement systems and procedures by overseeing all aspects of the work conducted by ESCOM procurement unit and the Internal Procurement Committee (IPC) to ensure compliance

and actively protect the integrity of the systems, procedures and overall procurement management process and ensure efficient and effective performance.

All related activities were implemented and the specific recommendations made to improve the procurement unit within ESCOM are discussed in Chapter 4.

3.4.2.2 Regulatory Strengthening Activity

The Regulatory Strengthening Activity complemented the Infrastructure Development Project and the ESCOM Turnaround Activity by providing support for the Government's policy reform agenda and building capacity in pivotal sector institutions such as MERA and MoE. The objectives of the Regulatory Strengthening Activity were to develop a regulatory environment, consistent with best practices in independent power utility regulation, that supported investment in generation and grid capacity at an affordable cost, with the potential participation of the private sector. The specific areas of interventions are described below.

3.4.2.2.1 Tariff Reform Sub-Activity

Under this sub-activity, the following agreed areas were implemented by MCA-Malawi:

1. Equitable Tariff Application to the Regulator Assistance to ESCOM

MCA-Malawi funded a cost of service study (COSS) to determine appropriate tariff levels and schedules to achieve full-cost recovery, more efficient utilization of electricity and achievement of social objectives. On February 22, 2017, MCA-Malawi signed a contract agreement with Economic Consulting Associates (ECA) Limited to undertake the (COSS. The original contract value signed was US\$392,095.00, but was amended to include support to ESCOM in the preparation of the tariff application to MERA. The objective of the contract was to undertake a COSS to determine the Long-Run Marginal Cost (LRMC) per kWh. The COSS was further used to provide inputs to the next ESCOM base tariff application that would assist them in determining a cost-reflective tariff that is in line with international best practices as well as regulatory requirements under the new tariff methodology that was approved by MERA in 2016. Specifically, ECA conducted a robust COSS that estimated a LRMC tariff that: covers full cost recovery; promotes an effective allocation of economic resources; is fair and equitable, easy and simple to implement, economically sound with the principle of promoting the viability of both ESCOM and EGENCO operations; representative of a foundation for stable pricing, supporting of minimized pooling; and reflective of time variability of costs. The performance of the ECA contract is rated satisfactory.

1. Power Sector Tariff, Regulatory and Institutional Improvement

A key component to the regulatory strengthening component included the need to ensure efficient and effective policy, legal and regulatory reforms: Through the MCC Malawi Compact, MCA-Malawi supported the adoption of policy, legal and regulatory changes necessary to implement tariff reform that included:

- (1) Rationalizing the five percent inflation fluctuation trigger and the four-year interval for review of base tariffs and tariff adjustment formula, so that tariffs may be adjusted on a basis that supports the viability of licensees.
- (2) Improving the components and definitions for the tariff adjustment components, or the tariff indexation framework. This was to take into account the social objectives of promoting equitable access to low-income households.

On February 18, 2014, MCA-Malawi signed a contract agreement with Aurecon AMEI Limited worth US\$307,581.91 to provide tariff and regulatory advisory services to both ESCOM and MERA. The contract was further amended to include a training needs assessment as well as an addendum to the Regulatory Experts contract with a total value of US\$38,647.63, bringing the total contract sum to US\$346,229.54. Specifically, the consultancy provided two experts with the following responsibilities:

- ***Tariff and Regulatory Expert in ESCOM*** – assist in the development of a regulatory department/unit and provide regular advice and assistance with the objective of developing and enhancing ESCOM’s capacity to interact effectively with the Regulator, MERA.
- ***Regulatory Expert in MERA*** – work within the existing management structure of MERA to provide regular advice and assistance to management team with the objective of developing and enhancing MERA’s capacity to develop processes and procedures and to interact effectively with its regulated services providers such as ESCOM. In addition, to provide training and facilitate the transfer of regulatory knowledge to the management team to independently direct and lead MERA in order to carry out its regulatory responsibilities effectively.

The activities implemented under the Aurecon AMEI Limited contract were thus completed satisfactorily.

3.4.2.2.2 MERA Capacity Building Sub-Activity

MCA-Malawi implemented various activities to address the following:

- (1) ***Training***: Support the development and implementation of training and mentoring of MERA staff and complementary activities designed to develop MERA and ensure social and gender awareness and integration.
- (2) ***Benchmarking***: Conduct Electricity Sector Benchmarking study to institute best practices and benchmarks for corporate governance for electricity regulators, including regional, continental and international benchmarks and recommendations for future governance of MERA
- (3) ***Revise Technical Codes***: Provide technical assistance to support MERA and Government in the development of new technical codes for transmission, distribution and metering to account for captive, cogeneration and other forms of generation.
- (4) ***Third Party Access***: Provide technical assistance to support MERA in developing new ‘*use of system*’ charging mechanisms, implement the design for a bilateral market, and develop codes to implement existing legal provisions on third party access to the transmission network.

- (5) *Annual Performance Reporting*: Support MERA in developing annual performance reports.

The specific interventions that were implemented by MCA-Malawi are outlined below.

1. MERA Benchmarking

This activity was implemented by CRISIL Risk and Infrastructure Solutions Limited (CRIS). The main objective of the assignment was to undertake a benchmarking study for MERA, train MERA on regulatory best practices, peer reviews, annual performance reporting, and third party access. The contract was successfully implemented and the performance is rated satisfactory.

3.4.2.2.3 *Creating an Enabling Environment for Public and Private Sector Investment Sub- Activity*

MCA-Malawi supported a number of interventions related to the agreed areas of cooperation. These included:

- (1) *Market Design*: Support Ministry of Energy's efforts to study and design a market structure for the power sector; and the building blocks of a bilateral power trade market
- (2) *Consumer Outreach and Advocacy*: Support public education and outreach activities to support consumer organizations, industrial and commercial users, and other key players in advocating for improved service.
- (3) *Parliamentary Oversight*: Work with Parliament to strengthen its role in oversight of the power sector.

The following interventions were implemented by MCA-Malawi related to Market Design.

1. Energy Advisor

The initial contract between MCA-Malawi and the Energy Advisor was signed on November 22, 2013 with an initial contract value of US\$834,900.00 for a period of two years. This contract was amended and extended the Energy Advisor's contract by an additional two years. The specific duties of the Energy Advisor included: (i) review the sector reform requirements outlined in the Malawi Compact and advise GOM on compliance with those requirements, including but not limited to the design and creation of an Independent Systems and Market Operator (ISMO) model for the Malawi power system, regulatory independence, corporate governance, improvement of existing sector policies, laws, regulations, institutional arrangements, recommendations on necessary changes, and development of an implementation plan; (ii) work alongside senior level members of GOM to analyze and make recommendations concerning the IRP, which includes supply, transmission and distribution planning options and strategies; (iii) advise GOM on unsolicited generation proposals that the GOM receives as to their technical and economic merits, financing capabilities of the investor, and the overall seriousness of the proposal; (iv) support GOM's discussions and negotiations with other governments and private sector stakeholders to encourage constructive investments in power sector infrastructure; (v) on behalf of GOM, engage with ESCOM's senior management to support the MCC Compact's objective of restoring the

utility's financial health and rebuilding ESCOM into a financially strong, well-managed company that can attract investment and expand its business activities on a sustainable commercial basis; (vi) as part of GOM team, engage with MERA's senior management and commissioners to develop an environment that attracts constructive investment in the Malawi energy sector and the expansion of power service to support the growth of the Malawian economy; and (vii) identify training needs and the need for supplementary advisory services to support GOM's power sector initiatives and interventions, including transaction advisory services (financial, legal, and technical advisory services to be provided to the GOM via separate consultancies) for any near term interconnection agreements with neighboring power systems (e.g., Mozambique and Zambia) or power project transactions. The Energy Advisor's deliverables were provided through monthly reports. Overall, the Energy Advisor's contract was satisfactorily implemented.

2. Power Market Restructuring

On September 26, 2014, MCA-Malawi signed a contract agreement with AF-Mercados Energy Markets International to undertake a Power Market Restructuring Study as well as assist ESCOM and GOM to implement the proposed recommendations. The main objective of the consultancy was to develop a Power Market Restructuring (PMR) road map to guide the future of the Electricity Supply Industry (ESI) in Malawi that would allow for competition to be the business of the day in both the generation and distribution sectors of the ESI. Specifically, the consultancy was implemented in three phases. The first phase reviewed and recommended updates to the current energy policy with a focus on the electricity and renewables industries, electricity acts, renewables acts and regulations. The second phase of the contract focused on reviewing the electricity supply market and the development of a restructuring road map, including the development of market rules, grid codes, and transmission pricing. The third phase of the contract included supervision of the implementation of the PRM road map based on the approach approved by GOM. Phases 1 and 2 were fully implemented while Phase 3 activities were delayed by late implementation of approved recommendations. Overall, the performance of the consultancy is rated satisfactory.

3. Independent Power Producer (IPP) Framework

On September 30, 2015, MCA-Malawi hired an IPP Advisor to develop a framework that would assist GOM in (i) paving the way for private investment in electricity generation in Malawi; (ii) a process to solicit and evaluate independent power production proposals as well as unsolicited proposals from potential developers; and (iii) review and align the standard power purchasing agreement (PPA) templates for IPPs to the framework and processes along with a comprehensive set of supporting legal documents. The final IPP Framework was adopted by GOM in November 2017 and is available online. The IPP Framework contract was thus satisfactorily implemented.

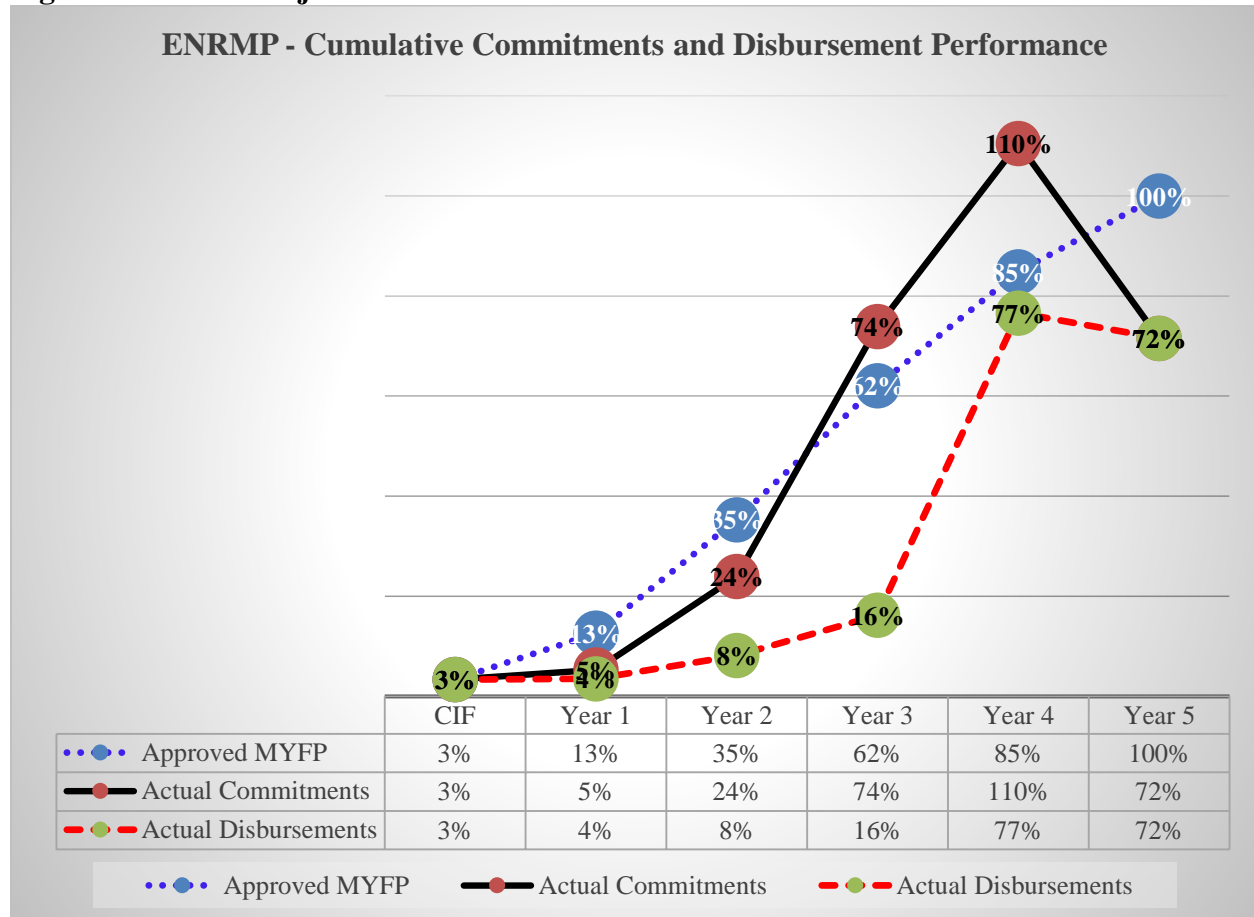
3.4.3 Environment and Natural Resources Management Project

The Environment and Natural Resource Management (ENRM) Project main focus was to mitigate the growing problems of aquatic weed infestation and excessive sedimentation in the Shire River Basin. The ENRM Project invested in weed and sediment management and promotion of improved environmental and natural resource management practices in the upper and middle Shire River upstream of the three hydro power stations of Nkula, Tedzani and Kapichira HPPs. The ENRM

Project was also complemented by the Social and Gender Enhancement Fund (SGEF) that empowered men and women to engage in sustainable land management practices.

Figure 8 illustrates the financial performance of the ENRM project during CIF and Compact Implementation period.

Figure 8: ENRM Project Commitment and Disbursement Performance



The performance of the ENRMP in the first four years was satisfactory with a peak on commitments reaching 110% in year 4. However, this was short-lived as the Directorate faced a number of contract terminations due to poor performance of contractors. Eventually, the overall commitment was reduced to 72% in year 5 of Compact implementation which was not satisfactory. Disbursement performance has also not been satisfactory reaching 72% as of January 2019. The three main ENRM project activities that were implemented under the MCC Malawi Compact included the following: (i) Weed and Sediment Management (WSM; \$15.9 million); (ii) ENRM (\$10 million); and (iii) the Social and Gender Enhancement Fund (SGEF; \$2 million). In addition, the ENRM Project also established an Environmental Trust as part of the ENRM activity to be responsible for funding future ENRM and SGEF programs after the compact closes that will continue to address sustainable land management and social and gender barriers in the Shire River Basin.

3.4.3.1 Weed and Sediment Management Activity

The Weed and Sediment Management (WSM) activity involved procuring and using mechanical equipment to reduce sedimentation and aquatic weed infestation at the Liwonde Barrage, Nkula HPP, and Kapichira HPP. The equipment procured included the following:

- **Liwonde Barrage:** Purchase and supply of two harvesters. Two harvesters were bought including conveyer accessories and parts by JGH/Aquarius and were delivered in December 2017. Additional activities implemented include the purchase of two tipper trucks which were delivered in May 2018
- **Kapichira Plant:** Development of a new Dredged Material Placement Area (DMPA) for Kapichira and supply and use of dredger for Kapichira delivered by Ellicott Dredgers, supply of two tipper trucks and two backhoe loaders.

The benefits of these interventions are expected to directly benefit households and businesses through increased power generation, thereby improving electricity reliability and reduce blackouts and brownouts. Additionally, EGENCO staff will be able to learn how to operate and maintain new dredging and sediment removal equipment. This technical knowledge transfer can provide these employees with professional development and it will improve organizational capacity. The main contractors under this activity were Johs. Gram Hanssen (JGH) A/S and Ellicott Dredges, LLC. The first contract was awarded to JGH on September 16, 2016 to supply, install, and train and provide required dredging and weed harvesting goods for Nkula, Kapichira HPP and Liwonde Barrage. The total contract value was US\$18,086,537. However, the Lot 1A of the contract was terminated prematurely due to JGH's nonperformance. Under this contract, the vendor was only able to supply two weed harvesters, conveyor and two tipper trucks under Lot 2A for Liwonde Barrage with an estimated contract value of US\$1,959,617.00. The new contractor to supply related dredging equipment for Kapichira was Ellicott Dredges, LLC who signed a contract value of US\$7,013,875.50. The dredging equipment was delivered by the Contractor late September 2018, a week after CED.

3.4.3.2 Environment and Natural Resources Management Activity

The ENRM activity supported grants to projects that reduce soil erosion by improving land management activities in high-priority (or "hot spot") catchment areas that were identified in baseline assessment reports as being particularly large contributors to excessive soil runoff in the Shire River basin (LTS International et al. 2010, 2011, 2013, 2014a, 2014b, 2014c). The SGEF activity provided grants for programs in these same catchment areas that helped women and vulnerable groups engage in more sustainable land use practices and improved decision-making power and social outcomes. The grants also supported programming to work with men who had limited control of resources in a matrilineal society. MCC and MCA-Malawi established a grant facility to fund ENRM and SGEF activities. These grants were implemented within 12 catchment areas (seven in the Upper Shire and five in the Middle Shire) identified in the baseline assessment reports. Much as MCA-Malawi focused only on five hotspots, MCA-Malawi partnered with the World Bank under the Shire River Basin Management Project whereby the World Bank also prioritized five hotspots. In August 2015, MCA-Malawi signed contracts with nine (9) NGOs to implement ENRM-SGEF interventions in the Upper Shire River. Two additional grants were

signed in December 2015, making the total number of Grants signed eleven (11). The total value of contract signed amounted to US\$6,143,809.00 and are expected to be implemented until September 2018. These grants had a renewal option that occurred annually of which all 11 grantees continued implementing in the second and third years.

According to the Grants Manual (MCA-Malawi Grants Manual, 2014, p. 3), the specific objectives of the ENRM fund were to initiate or expand efforts in addressing the environmental and natural resources management challenges with the aim of curbing soil erosion, sedimentation and aquatic weed infestation problems in the upper and middle Shire River basin. Second, The SGEF aimed at supporting interventions that addressed the social and gender disparities in the upper and middle Shire River basin and improve participation of both men and women in the implementation of ENRM activities.

Table 2 presents the targeted hotspots and intervention sites where the 11 Grantees/NGOs operated. Out of the 12 identified hotspots in the upper and middle Shire River basin, 3 hotspots were not targeted due to limited funds. These included Upper Namingundi; north west landscape unit of catchment and Upper Masanje and Lufalo, middle section of eastern side of catchment in the upper Shire River basins; and Likuzi- Kapeni hotspot in the middle Shire River basin.

According to the MCA-Malawi Grants Manual (2014, p. 4-5), the ENRM key priority areas included the following:

- (1) Support to communities, and decentralized institutions in application of policy and legislation and in improving their participation in environment and natural resources management decision making;
- (2) Management and sustainable utilization of forests and promotion of individual woodlots, tree planting and management;
- (3) Piloting demonstrating and promoting on-farm soil and water conservation measures, sustainable crop techniques including conservation agriculture and agroforestry;
- (4) Reduce demand for and improve sustainability of wood energy use;
- (5) Stabilize and enhance rural incomes, employment and business; and
- (6) Breeding, introduction and management of bio-control agents and monitoring of aquatic weeds.

On the other hand SGEF key priority areas (MCA-Malawi Grants Manual, 2014, p. 6-7) include:

- (1) Community engagement to improve joint decision making, women's and men's empowerment and sustainable management of natural resources through proven participatory methodologies;
- (2) Developing community-based tools for improved and equitable land management; and
- (3) Leadership training for women.

Economic empowerment of women through business skills, marketing and/or other approaches. The only activity that was not implemented was the biological weed control mechanism that was de-scoped.

Table 2: Grantees Operating within Identified Hotspots

Particulars	FISD	CICOD	SHA	WE-Effect	TSP	ActionAid Malawi	Assemblies of God Care	WOLREC	THP	United Purpose	CCJP
Upper Shire River Basin											
Upper Namingundi; north west landscape unit of catchment;											
Upper Nasenga south; located in north west landscape unit of catchment				X							
Mid Nkasi; middle section of western side of catchment			X					X			
Upper Chimwalira and Upper Chilanga; south west section of catchment										X	
Upper Masanje and Lufalo, middle section of eastern side of catchment											
Upper Lungamasa; north east area of catchment between Namizimu and Mangochi Forest reserves							X				X
Machinga		X									
Middle Shire River Basin											
Upper Rivirivi					X			X			
Likuzi- Kapeni											
Mwetang'ombe – Lisungwi						X			X		
Lunzu – Linjizi	X										
Lower Barrage river bank			X								

Source: CRISIL Data Quality Audit Report (2017)

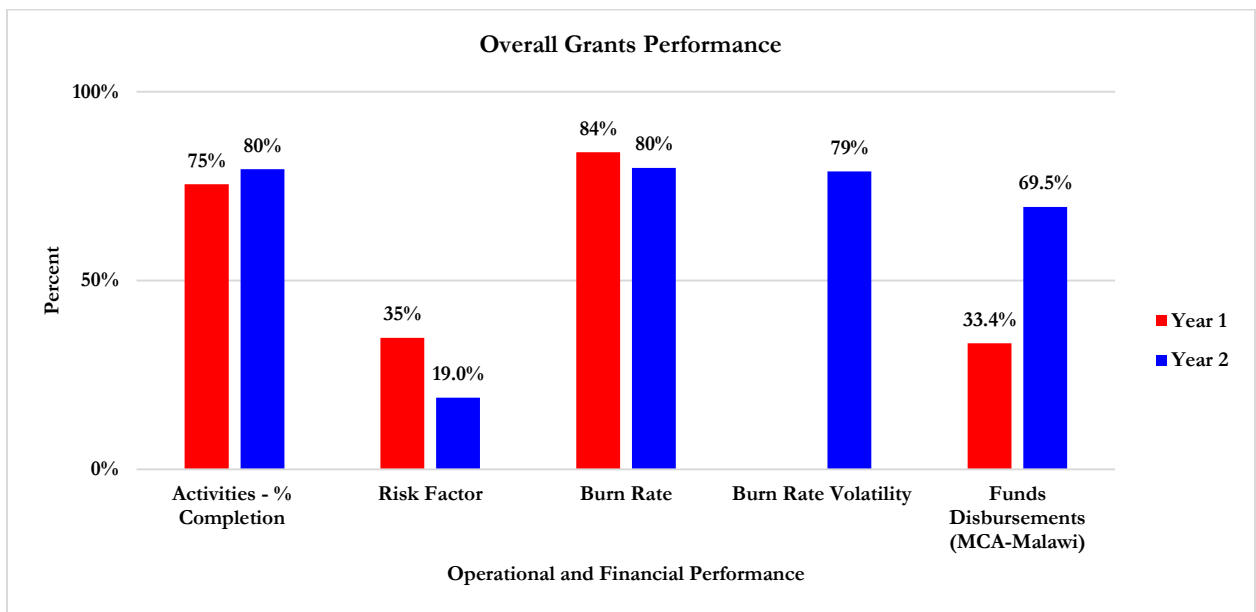
1. Grants Performance

Findings from the End-Term Evaluation conducted by IOS Partners on behalf of MCA-Malawi showed that implementation of grants activities led to the following:

- (a) Provided communities with alternative sources of income, thereby, enabling forests to be conserved;
- (b) Promoted greater awareness of environmental issues;
- (c) Encouraged saving culture through the creation and operationalization of Village Loans and Savings Schemes;
- (d) Village Savings and Loans (VSL) have enabled people to borrow sizeable amounts of money which is used to buy assets or as business capital;
- (e) Contributed to women empowerment in terms of the women contributing meaningful financial resources to the family; more women having influential positions in the community; women contributing meaningfully to developmental decisions in the community;
- (f) Improved literacy levels of both men and women;
- (g) Led to decrease in the rates of domestic violence; and
- (h) Led to decrease in school dropout rates as parents are able to pay for school fees for their children.

In terms of implementation, there was constant improvement from each year for all the grantees. For example, based on the second internal evaluation conducted by MCA-Malawi in 2017 (and illustrated in **Figure 9**), second year performance on the completion of project deliverables improved marginally from an average of 75% in year one to 80% in year two.

Figure 9: Summary of Grants Performance in Year One and Two



Source: ENRM_SGEF Assessment: Year two Evaluation Report (MEED)

The overall risks dropped significantly from an average of 35% in year one to an average of 19% in year two implying that the Grantees were learning fast from their implementation risks related to project management, resources, financial and quality assurance. The burn rate based on their approved and revised budgets fell slightly from the previous year from an average of 84% to 80% in year two. MCA-Malawi also improved its disbursements to the grantees amid changes in the invoicing process which will be discussed in more details in the main body of the report. As of June 2017, MCA-Malawi disbursed more than two thirds (69.5%) which was a significant achievement. Overall, MCA-Malawi managed to disburse about US\$5,484,236.00 of the US\$6,143,809.00, representing about an 89% disbursement rate.

2. Mulanje Mountain Conservation Trust (MMCT)

On December 29, 2015, MCA-Malawi signed a cooperative partnership agreement with MMCT worth US\$2,886,200.00. The overall objective of the cooperative partnership was to establish and start-up the operation of an Environmental Trust to continue addressing the siltation, aquatic weed infestation and related environmental degradation problems that negatively impacted hydropower generation along the Shire River basin. The Environmental Trust is expected to serve as a sustainable organization to continue funding programs after the compact closes, to support sustainable land use practices and promote gender equity in similar geographic areas. The Trust may also serve to monitor changes in land management practices, agricultural area, and deforestation. Through a trust-establishment cooperative agreement that began in January 2016, MCC invested in the administrative and operational groundwork to have a functioning trust in place by the end of the Compact. The cooperative partnership agreement was expected to run for 31.5 months from partnership effectiveness. However, due to nonperformance of MMCT, the cooperation agreement was terminated on January 31, 2018. Only activities amounting US\$816,620.00 were implemented, representing 32% of the signed agreement. Overall, the performance of MMCT was unsatisfactory. The final establishment of the Shire BEST Trust was supported through the hiring by MCA-Malawi of a local consultant and substantial support from MCC.

3.4.4 Social and Gender Inclusion

3.4.4.1 Commitment to Social Inclusion and Gender Equality

MCC recognizes that gender inequality can be a significant constraint to economic growth and poverty reduction. Therefore, in order to maximize the impact of the Compact, MCA-Malawi integrated social inclusion and gender equality components, which are reflected in its Social and Gender Integration Plan (SGIP). Malawi's SGIP was initially drafted and approved in October 2013, updated for the first time in January 2015, and updated for the last time in September 2017. Upon completion of the project, MCA-Malawi developed its Social and Gender Summary Report, which lays out the results achieved as well as lessons learned. The main goals of the SGIP is to protect women and vulnerable groups from negative impacts from the investment and to optimize opportunities the projects may bring to communities, with a focus on women and vulnerable groups. Human resources were critical to accomplishing these tasks, with MCA-Malawi having a dedicated Social and Gender Integration Directorate (led by a Director and two additional support staff) and each project had dedicated social and gender staff (described in further detail below).

3.4.4.2 Infrastructure Development Project

Construction projects have an impact on communities located near project sites, especially when it involves a large influx of male workers. The Infrastructure Development Project was implemented by six contractors working on a total of eight projects. All projects had full-time social and gender specialists responsible for developing and implementing social and gender requirements, as well as reporting on progress. Each contractor was required to develop seven sub-plans on: 1) trafficking in persons (TIP); 2) child labor; 3) women's economic empowerment; 4) worker's rights; 5) sexual harassment; 6) HIV/AIDS; and 7) community relations. Additionally, in order to promote women's employment, each contractor set a voluntary target of 25% employment of women in their contracts and the cumulative average in implementation was 11%.

1. Main Results

First, there were capacity building exercises for all relevant stakeholders in the affected districts. This was followed by awareness programs targeting both the workers and the communities surrounding the Construction sites. In addition to setting up communication and reporting mechanisms, all the construction sites had installed Trafficking in Persons (TIP) reporting boxes that were accessible to all the workers and communities. Second, the contractors (CC) worked effectively by engaging other stakeholders that were very knowledgeable on TIP such as Malawi Network against Trafficking (MNAT) as the case was with L & T, Ministry of Gender as well as the police. Most of these stakeholders assisted with IEC materials as well awareness raising programs. It is also important to note that MCA-M engaged Eye of the Child and Global Hope Mobilization (GLOHOM) as consultants to assist CHINT with the implementation of the TIP sub-plan and HIV & AIDS sub plan respectively after the latter clearly demonstrated capacity challenges in implementing the sub-plans. The CHINT went without a social manager for prolonged periods of months hence they could not implement social activities. Identification of TIP hotspots and a corresponding list of community stakeholders is one of the key achievements. For instance, Mota Engil and Andritz were able to identify Nkula, Zalewa, Neno, Mwanza and Blantyre as TIP hotspots where implementation of the awareness programs was intensified. For each hotspot identified, the CCs had a register of stakeholders from that particular location such as police officers, social welfare personnel and other community leaders. The community-based stakeholders were a replication of the district stakeholders. This was done to ensure timely, effective and coordinated response to TIP incidences as well as enhance awareness activities. Finally, a worker at Nkhoma substation under Lot 1B was able to rescue a 17 year old boy who was stranded in Lilongwe City after being trafficked and left alone. The knowledge that the worker gained from the TBT empowered him to act accordingly.

2. Lessons Learned

There is need for intensive awareness programs, especially in the communities to be able to identify and report incidences of TIP. This could be achieved through coordination with stakeholders that are very knowledgeable of the issues of TIP such as MNAT and Ministry of Home Affairs specifically through the Malawi Police Service. Some CCs understanding of catchment areas of their sites were limited to communities within close range of their sites. For instance, L&T management did not understand why they had to conduct awareness at Kamphata

as a hotspot because it was about 5km from Nkhoma site. Some CCs therefore, felt that they were overstretched by including areas that were geographically outside their catchment areas. However, most of the CC workers were actually residing at Kamphata due to availability of services such as housing, food supplies and leisure amenities. A deeper understanding of hotspots was therefore, needed in the preparatory workshops to ensure managers were aware of that social implications or risks of a project goes beyond the project site.

3. Sustainability

ESCOM's Social and Gender and Anti-Sexual Harassment Policy (developed with support from the Compact) includes provisions for the Social and Gender Manager to transfer the safeguards used in the construction projects funded by MCA-Malawi to ESCOM's standard operations. In order to accomplish this, prior to the end of implementation of the projects, ESCOM's Social and Gender Manager visited some sites and learned more about the work to prevent TIP, child labor, sexual harassment, HIV/AIDs and to strengthen women's economic empowerment and community relations. Furthermore, through the social and gender trainings provided to all ESCOM staff, these experiences were also included in the program for different departments to sustain best practices implemented through the Malawi compact.

3.4.4.3 Power Sector Reform Project (PSRP)

The Compact's policy reform included gender equality and social inclusion efforts across various institutions involved. The main entry-points for integrating a social and gender component in this process includes:

- Development of ESCOM's Gender and Social Inclusion & Anti-Sexual Harassment Policy, establishment of ESCOM's Gender Unit (with dedicated manager for ESCOM, and budget item), and an M&E Plan to track progress of the different initiatives. The Policies were developed in a participatory manner by a policy team, comprised of members from all Departments and validated by ESCOM management and approved by its Board of Directors. In order to train and raise awareness on the scope and mandate of the policy, the Compact provided training for all staff. After compact completion, ESCOM's Social and Gender Manager will also replicate the social and gender safeguards adopted by contractors in the compact and incorporating these in ESCOM's regular construction operations, which are components of the ESCOM policy.
- As part of ESCOM's Gender and Social Inclusion & Sexual Harassment Policy implementation, through a partnership with the University of Malawi, The Polytechnic, ESCOM launched a scholarship and internship program for high performing female engineering students in the Engineering field in February 2017 [Link <http://www.escom.mw/escom-scholarship.php>]. The first cohort of six high performing female engineering students commenced their internships at ESCOM in June 2017. ESCOM launched another scholarship program for female students at the Malawi University of Science and Technology (MUST) in November 2017. ESCOM plans to link these students with EGENCO for internship opportunities. Furthermore, in 2017 ESCOM started implementing its career talks program by focusing on three secondary schools in Blantyre

rural and urban areas with the aim of interesting female students in engineering courses/careers.

- Support the review and update process of Malawi's Energy Policy to incorporate social inclusion and gender equality components. The major contribution that MCA Malawi made to the process was to mobilize the Ministry of Gender and other relevant stakeholders in the gender sector to advocate and lobby for more visibility of GSI across the policy.
- Through support from the Compact, EGENCO also developed its Social Inclusion and Gender & Anti-Sexual Harassment Policy, approved by its management and Board of Directors and also set-up a position to oversee implementation of this Policy. Despite the ground-breaking achievements on power sector reform integrating gender and social inclusion, there was limited engagement with MERA and engagement in the tariff reform process. Nonetheless, the achievements in ESCOM in particular have situated Malawi as a model on policy reform integrating gender in the power sector.

In order to promote sustainability of these institutional and policy efforts, the following actions were conducted:

- Trainings were conducted for 4 categories: a. Board and Management b. Managers and Section Heads c. Gender Focal Persons d. Other cadres of staff. Total number of people trained is 866. Number of people trained at EGENCO is 238 (186 male and 52 female). Number of people trained at ESCOM is 628 (551 male and 77 female).
- ESCOM and EGENCO staff (add exact number in August) received social and gender training in order to implement their corresponding institutions' Social and Gender and Anti-Sexual Harassment Policy. Through these trainings, workers at all levels learned about their respective Policy and how it relates to their work.
- Printed copies of the ESCOM Social and Gender and Anti-Sexual Harassment Policy were distributed to all workers as well as to relevant stakeholders, disseminating the commitments that ESCOM has made and its implementation plan.
- The Malawi Compact supported the development and implementation of ESCOM's Monitoring and Evaluation Plan for its Social and Gender Policy. This M&E tool will track progress fulfilling ESCOM's management commitments, therefore, strengthening sustainability of such efforts.
- Two public events to launch the ESCOM and EGENCO policies were conducted (add exact dates), in order to disseminate with a wider audience and stakeholders the commitments assumed by each institution in terms of social and gender components and prevention of sexual harassment.

3.4.4.4 Environmental and Natural Resource Management Project (ENRM)

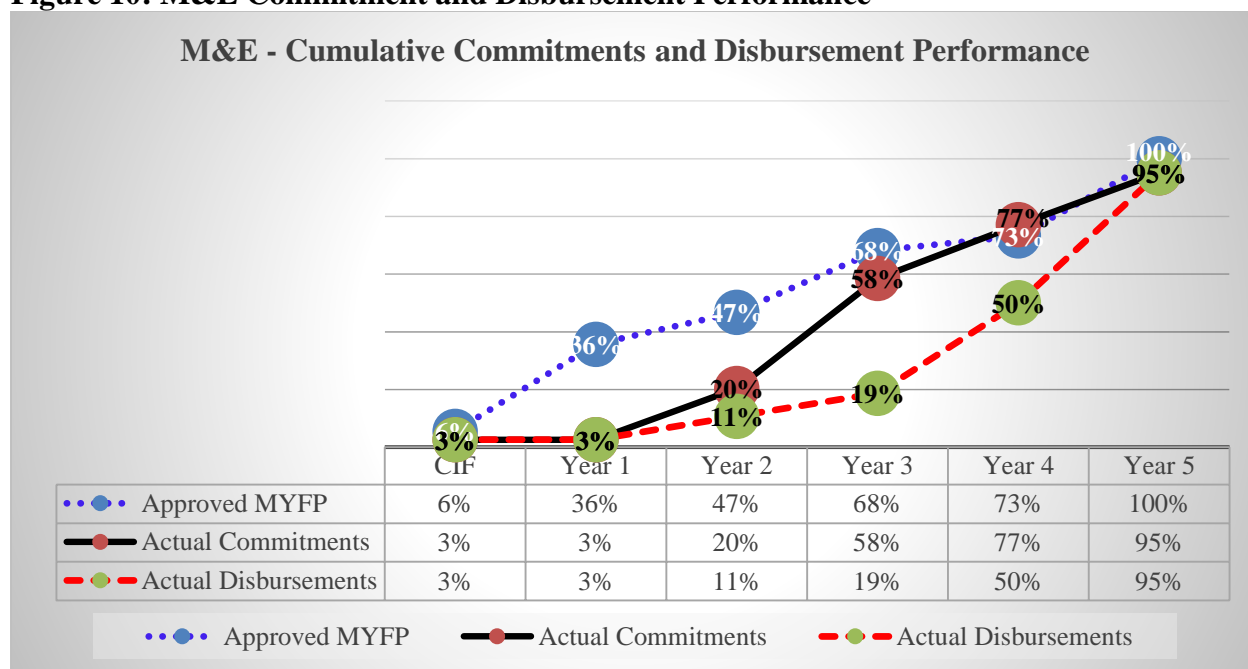
One activity of the ENRM Projects involved working with communities up in the hills surrounding the Shire River, through local Non-Governmental Organizations that worked with the communities to plant trees, improve agriculture practices, and use techniques that slowed soil erosion. To complement the natural resource management efforts, the Compact included the Social and Gender Enhancement Fund (SCEF) which supported improved land use management and natural resource-based economic development activities carried out by women and vulnerable groups in the Shire River Basin. Gender inequalities affect access, control, and use of natural resources, and women-

headed households face particular challenges. Poor land management practices lead to more siltation and weeds in the Shire River, which can shut down the hydro plants. Therefore, ensuring women are included in efforts to improve land management practices is indispensable. Through the IDP, the Compact invested in refurbishing Nkula A, which is on the Shire River. However, if siltation and weeds aren't reduced, the plan will be negatively impacted. Therefore, addressing gender equality in this Activity is necessary for the sustainability of the infrastructure investments. This activity included literacy and numeracy trainings, community engagement and community-based tools for improved and equitable land management, leadership training and economic empowerment for women, and the establishment of village savings and loans groups.

3.4.5 Monitoring, Evaluation and Economics

The Monitoring, Evaluation and Economics Department (MEED) within MCA-Malawi has been responsible for ensuring that all agreed program interventions are fully monitored and their impacts evaluated to ensure compliance to Compact agreements and covenants. The key guiding tool used by MEED was the Monitoring Evaluation Plan which was first approved on September 19, 2013 and further modified in September 2014. The Compact went through four M&E Plan modification memorandums during the compact implementation period and the last one was approved in June 2018. The M&E Plan is part of the action plan set out in MCC Malawi Compact that was signed on April 7, 2011 between the United States of America, acting through the Millennium Challenge Corporation, a United States Government corporation (MCC), and the Millennium Challenge Authority in Malawi (MCA-M), acting through its government. The M&E Plan supported the provisions prescribed in the Compact as well as governed by the principles stipulated in the Policy for M&E of Compacts and Threshold programs, dated March 15, 2017. The total allocated funds for M&E related activities was US\$7 million, representing 2% of compact funding. **Figure 10** illustrates how these funds were utilized during compact implementation period and CIF.

Figure 10: M&E Commitment and Disbursement Performance



As illustrated in **Figure 10**, most commitments related to M&E were done mainly from the second year onwards and the gap between targets and actual commitments was reduced in year 3. Total commitments made in year 5 of the Compact Implementation Period was at 95% with total disbursements made as of January 2019 of 95%. Overall the financial performance under M&E was highly satisfactory. A number of interventions were implemented related to M&E and guided by an approved work plan. In order to support the implementation of M&E activities, seven key sub-activities were implemented under the following themes: M&E Planning; training and capacity building; performance indicator monitoring; studies and surveys; mid- and end-term evaluations; communications; and any miscellaneous supported by M&E.

3.4.5.1 Planning Activity

1. Semi-Annual Reviews

Much as this activity was part and parcel of PSRP, MEED was mandated to prepare Semi-Annual Review (SAR) guidelines signed on September 20, 2013 by the Secretary of Energy and Mines and the MCA-Malawi CEO. In addition, MEED was also mandated to prepare the SAR Forums and compilation of SAR reports. Since 2014, MCA-Malawi organized seven Semi-Annual Review Forums as illustrated in the **Table 3**:

Table 3: Semi-Annual Review Forums Held by MCA-Malawi

Description	Date Held	Theme	Key Areas of Focus
1 st SAR Forum	May 6, 2014 – Golden Peacock Hotel, Lilongwe		Progress on agreed SAR KPIs, new emerging issues on power sector reform (MNREM)
2 nd SAR Forum	November 20, 2014 – Crossroads Hotel, Lilongwe	Achieving efficiency by strengthening institutions involved in governing the power sub-sector	Review progress on implementation of corrective actions from 1 st SAR Forum; discuss emerging issues and recommendations to include in Implementation Action Plan agreed
3 rd SAR Forum	July 22, 2015 – Sunbird Capital Hotel, Lilongwe	Restructuring the power subsector for efficient delivery of electricity services	Review of (i) ESCOM KPIs under finances, operations, and regulatory strengthening; (ii) 9 main corrective actions agreed during 1 st SAR; (iii) four emerging issues (procurement, regulatory strengthening, tariff modelling, and power market reforms); (iv) progress made on developing an implementation plan for power market restructuring roadmap
4 th SAR Forum	January 27, 2016 – Sunbird Mount Soche Hotel, Blantyre	Assessing power sector reform progress midway through the Compact	Assess progress made on agreed corrective actions during 1 st , 2 nd , and 3 rd SAR; progress on formulation of IPP Framework; progress on PMR; progress on generation planning;
5 th SAR Forum	September 20, 2016 – Sunbird Nkopola Lodge, Mangochi	Three years of power sector reforms: taking stock and setting	Progress on (i) ESCOM creditworthiness – achievements and challenges (financial, operational, procurement performance); (ii) power market restructuring and IPP

Description	Date Held	Theme	Key Areas of Focus
		priorities for the next two years	program; (iii) regulatory framework and cost reflective tariff;
6 th SAR Forum	March 15, 2017 – Sunbird Capital Hotel, Lilongwe	ESCOM unbundling: are our priorities on track?	Review progress on: (i) ESCOM unbundling (establishment of EGENCO); (ii) integration of independent power producers (IPP framework, establishment of Single Buyer); (iii) cost reflective tariffs (ESCOM financial performance, and MERA’s view on cost-reflective tariffs); (iv) PSRP communication strategy and change management
7 th SAR Forum	October 4, 2017 – Sunbird Capital Hotel, Lilongwe	Sustainability of MCC Malawi Compact investments	Progress on: (i) cost-reflective tariffs (compact closure main issues for sustainability, Power Purchasing Agreements between ESCOM and EGENCO); (ii) EGENCO and ESCOM preparedness in taking over MCC Compact investments; (iii) generation plans and procurement

A number of recommendations were made during each Semi-Annual Review Forum and the status on their completion will be discussed in Chapter 4 of this report.

2. Feeder Metering Design and Supervision Contract

On December 12, 2014, MCA-Malawi amended the existing contract with Fichtner GbmH & Co. Limited to undertake a needs assessment, develop detailed specifications for the supply and installation of energy meters that had voltage, current, real and reactive power capability at the distribution level for effective data capture and analysis of the quality of supply through the ESCOM grid. The amendments included also the supervision of the Feeder Metering contract assignment that was awarded to Shenzhen Inhemeter. The total contract value awarded to Fichtner for this assignment was US\$463,898.00. Specifically, Fichtner implemented the following tasks during the development of detailed specifications:

- 1) Assess and quantify the metrology needs.
- 2) Develop detailed specifications for the supply and installation of metering as assessed, having communication capability to a centralized data capture system at a remote location
- 3) Liaise with the ESCOM Consultant under the World Bank project on their Automated Meter Reading system with a view to integrate the meters under this project to their recommended system.
- 4) Develop tender documents for the recruitment and supervision of supply, installation and commission contractors for the recommended meters.
- 5) Facilitate the development of detailed training plan(s) and train users at various locations on usage by the Contractor, on reading, recording, operations and system as well as maintenance of electronic meters procured.
- 6) Prepare cost estimates of all components of the planned project.

Overall, the performance of the consulting engineer on the feeder metering contract design and supervision was implemented satisfactorily.

3. Feeder Metering Contract

On August 16, 2016, MCA-Malawi signed a contract for the supply and installation of Feeder Metering equipment with Shenzhen Inhemeter Co. Limited. The initial contract value signed was valued at US\$2,177,857.50. The contract was further amended to a contract price of US\$2,737,952.00 in October 2018. The feeder metering equipment was installed in 29 substations and a total of 131 meters were commissioned and data is read remotely on the ESCOM Automatic Meter Reading (AMR) system. All Feeder Metering deliverables were completed satisfactorily.

3.4.5.2 Training and Capacity Building Activity

Under this activity, MCA-Malawi benefited from an M&E training that was financed by MCC through Social Impact, a US based organization. The support provided by MCA-Malawi was to fund the venue for this activity.

3.4.5.3 Performance Indicator Monitoring Activity

On August 28, 2013, MCA-Malawi signed a contract agreement with CRISIL Risk and Infrastructure Solution Limited to undertake a data quality review of all Key Performance Indicators (KPIs) reported under the approved M&E Plan. The total contract price of the DQR and DQA phases was US\$594,651.60. The Data Quality Review (DQR) was implemented in two phases: the first phase was implemented for a period of six months from August 2013 to March 2014 while the second phase included 4 No. annual Data Quality Audits that were conducted for a period of three months to audit progress on implementation of recommendations as well as review a subset of KPIs that were identified as problematic under each year. Specifically, the annual DQAs were a continuation of the DQR that continued to review the quality of data collected and reported for the Malawi Compact M&E framework in order to ensure the accuracy of the data reported on the MCC website, and to improve the quality of future data gathering and reporting efforts. This exercise aimed to ensure the quality and thus the accuracy of interpretation of results from the Compact key performance indicators.

The key objectives of the DQR and DQAs were as follows:

Data Quality Review Objectives:

- (1) Review the relevancy of the Compact indicators used in the M&E Plan:
 - (a) Review indicators to ensure their definitions, calculation and measurement methods accurately measure the intended results of the project and project logic;
- (2) Ensure the accuracy and quality of data collected to measure and calculate indicators:
 - (a) Identify the margin of error and limitations of each indicator for analytical purposes;

- (b) Verify the accuracy of baseline and historical data used to calculate M&E Plan indicators;
 - (c) Where errors are identified, re-compile accurate baseline and historical data in the appropriate MIS or ITT format, with appropriate documentation;
 - (d) If the accuracy of the data cannot be verified, identify alternative sources of data;
 - (e) Assess PPs' data collection practices, records and archiving management, reporting procedures, measurement equipment, and identify areas for improvement to ensure high quality data, archiving and reporting;
 - (f) Identify indicator targets that may need to be reviewed or changed due to any changes made to baseline data and or due to any serious concerns associated with the validity or reliability of the data/indicator;
 - (g) Identify limitations of each indicator for analytical purposes.
- (3) Make recommendations to strengthen the quality of data used in the M&E Plan:
- (a) Identify any recommend changes to indicators, indicator definitions, data collection procedures, reporting frequencies, etc.;
 - (b) Identify actionable and cost-effective interventions to improve the general capacity of MCA-Malawi and PPs to monitor, analyze and report on project results;
 - (c) Where new data is required, identify appropriate method of data collection, sources of data and associated costs for data collection;
 - (d) Recommend appropriate tools, protocols and procedures that MCA-Malawi and PPs may use for routine data quality reviews;
 - (e) If new equipment is required to ensure or improve the quality of data collection, identify and cost out any additional equipment and sampling strategies for measuring and verifying the quality of electricity service and supply resulting from the Compact investments.
 - (f) Make recommendations to ensure that MCA-Malawi and its implementing partners are in compliance with MCC's M&E related policies and best practices for M&E.

Annual Data Quality Audit Objectives:

- (1) Review the quality of annual data used to update the Indicator Tracking Table submitted to MCC on September 10 of each year that involved the following:
 - a) Identifying the margin of error and limitations of each sampled indicator for analytical purposes;
 - b) Verifying the accuracy of historical data used to calculate M&E Plan indicators;
 - c) Where errors are identified, re-compiling accurate historical data in the appropriate MIS or ITT format, with appropriate documentation;
 - d) If the accuracy of the data cannot be verified, identifying alternative sources of data;
 - e) Identifying limitations of each indicator for analytical purposes.
- (2) Follow up on implementation of recommendations made during the Base Period assignment on improving data collection, collation and analysis in the following areas:

- a) Training and Capacity Strengthening;
 - b) Equipment and Technology; and
 - c) Process and System Level improvements
- (3) Ensure that common formats used for data collection, collation and analysis are being effectively used by MCA-Malawi and its Project Partners and where applicable, support in developing and refining standard data collection templates and guided by the Data Quality Review Manual with emphasis on the following problematic KPIs:
- (4) Conduct adhoc training of MCA-Malawi and Project Partner staff involved in performance monitoring by providing a 3-day workshop on performance monitoring in Power Utilities as well as, where applicable, hands-on or on-site training for some of the key data collection sources.

All the key deliverables were implemented satisfactorily by CRISIL.

3.4.5.4 Studies and Surveys Activity

Under the M&E studies and surveys, MEED implemented a number of activities such as qualitative data collection, enterprise survey, and support to National Statistics Office for the Fourth Integrated Household Survey (IHS4).

1. Qualitative Data Collection

On September 27, 2016, MCA-Malawi signed a contract agreement with Centre for Development Management (CDM) to undertake a qualitative data collection exercise. The contract was implemented in two phases: base period that covered the period January – April 2015, and the midline qualitative data collection phase that commenced on October 17, 2016 to December 19, 2016. All the deliverables that were successfully completed and included qualitative research training, data collection exercise and production of the final qualitative data set by CDM and hence their performance was satisfactory

2. Enterprise Survey

On April 23, 2015, MCA-Malawi signed a contract agreement with Research Info Masters (REIMA) to conduct an enterprise survey and household focus group discussions. The contract had a base period and two option periods with a total contract value of US\$2,102,102.00. The base period contract value was US\$696,490.00 with option prices for midline valued at US\$692,420.00 and an endline price of US\$713,192.00. The base period assignment was implemented from April 23, 2015 to September 19, 2015. However, the contract was terminated prematurely due to nonperformance of the contractor and a final contract price of US\$385,828.00. The contractor only managed to collect data for the focus group discussions. The REIMA contract was thus unsatisfactory.

3. Fourth Integrated Household Survey

On April 6, 2016, MCA-Malawi signed a program cooperation agreement (PCA) with the National Statistics Office (NSO) to assist the MEED in the provision of high quality, accurate and timely data for use during interim, final and impact evaluations conducted under the Compact. The initial PCA was worth US\$800,000.00 of which US\$400,000.00 was disbursed between the period September 2016 and May 2017. The specific objectives of the PCA were twofold:

- (1) To incorporate electricity related questions in survey instruments for use during interim, final and impact evaluation of the Compact. This included:
 - a. NSO assigning a point of contact to coordinate M&E requirements for the Compact, served as liaison with MCA-Malawi and provided formal approval and validation of all M&E data requirements for the Compact.
 - b. Collect data and share the final cleaned data set with MCA-Malawi after completion of IHS4 and IHPS4;
 - c. Maintain records or documents to verify data reported to MCA-Malawi;
 - d. Participate in monitoring and reporting on the progress being made and recommend actions to be taken when progress is not in accordance with the agreed upon targets;
 - e. Attend, as necessary, regular meetings to review performance on key indicators and schedules for compact implementation.
- (2) To ensure quality of all relevant performance data. This included:
 - a. Conducting and ensuring regular reviews of the quality of data submitted to MCA-Malawi;
 - b. Implement, where applicable, recommendations from independent data quality review studies.

All NSO deliverables were satisfactorily implemented which included a database with 591 households interviewed. However, the remaining funds of US\$400,000.00 were de-scoped owing to the fact that the Fifth Integrated Household Survey will be conducted in 2019 after MCA-Malawi closes.

4. Variation Orders to IDP Contractors

To support the feeder metering project, MEED funded the supply and installation of instrument transformers (current transformers, voltage transformers and related works) at high voltage 66 kV and 132 kV substations across all regions of the country. The variation orders were offered to three IDP contractors on March 20, 2017, namely: Larsen and Toubro (L&T), Consolidated Power Projects (Conco), and Chint Electric. All variation orders were completed satisfactorily, except for Conco due to wrong equipment supplied by the Contractor.

3.4.5.5 Mid-term and Final Evaluations Activity

On July 14, 2016, MCA-Malawi signed a contract agreement with IOS Partners, Inc., to undertake a mid- and end-term evaluation exercise for the Malawi Compact. The total contract sum was \$765,819.60. The mid-term evaluation was done during the period August 15, 2018 to May 15, 2018. The end-term evaluation commenced on January 29, 2018 and was completed on June 29,

2018. All agreed deliverables were implemented satisfactorily by the Consultant which included the final mid-term and end-term evaluation reports.

3.4.5.6 Communications Activity

Several activities were implemented under this activity and included payment for stakeholder field visits and participation in semi-annual review forums.

3.4.6 Communications and Outreach

3.4.6.1 Communications Activity

The Communication and Outreach Directorate (COD) was responsible for developing and implementing MCA–Malawi’s strategic communications and outreach activities aimed at creating ownership through public consultation and engagement, managing expectations, building alliance and partnerships, raising the Compact’s visibility, documenting and sharing progress and results, with key stakeholders, and above all understanding of the Compact. The directorate communicated and engaged the public through mediums that were easily accessible and convenient to the targeted group. The directorate was also responsible for ensuring that all infrastructure and project sites were branded in accordance with MCC Standards for Global Marking and Technical Specifications for Infrastructure Signage. Infrastructure branding was completed on time and before commissioning/energizing of each IDP and ENRM structure/equipment. COD also liaised with the two directorates on timeline for branding and commissioning.

To manage and implement all its activities, COD developed a Communications and Outreach Strategy and Stakeholder Engagement Plans. Subsequent activity plans were also developed for particular specific activities. The documents were all critical for COD’s implementation of planned and at times adhoc activities. COD ensured that project Directors and Officers were part of the planning process for any outreach activities. To create, maintain and build trust and ownership amongst Malawians, COD also planned and implemented activities with support from different key stakeholders such as District Assembly staff, Ministries, Departments and the Media. COD also planned and implemented stakeholder engagement meetings with the private sector, CSOs and the media. There are several best practices relating to the MCA communication activities. A number of factors contributed to successful implementation of both planned and adhoc activities and more especially in creating ownership, building trust and support amongst community member (in project corridors), the media and public. These include the following:

Media networks: Four media networks (North, Central, South and Eastern Region) were established under the Compact. There are close to 40 journalists who form MCA-Malawi’s media network. COD established the network to ensure there is consistency in reporting the Compact. To achieve this, journalists were sensitized on the Compact and their expected roles as partners. Information Education and Communications (IEC Materials) and fact sheets on the Compact and MCC were handed out to during workshops and all media engagements and network members are encouraged to be proactive in reporting on the Compact and to continuously interact with MCA-Malawi through its social media networks, emails and phone calls to ensure they are updated on the progress. The expectation (which was achieved) was to have continuity in reporting progress

in Compact implementation. COD views the establishment and functioning of the networks as a best practice in project implementation because:

- (1) It focuses on bottom up approach as information flow is not vertical but horizontal which has allowed free flow of information that is key in keeping the nation informed with accurate and updated information on the Compact;
- (2) MCA-Malawi has managed to build media interest in monitoring and consistent reporting of Compact Progress. As part of monitoring, the media has questioned any delays in completion and informed the public on issues that has caused such delays;
- (3) Journalist in the MCA-Malawi Network have thus supported in implementation of the project through raising the Compact's profile and visibility. The journalist in the network are well informed on progress resulting in continued publication and broadcasting of Compact.

Editors Forum: Another best practice in networking for raising the Compact's profile and sustaining its visibility has been the involvement of Media Editors throughout implementation. MCA-Malawi through COD realized that strengthening the media networks will not be effective if the gatekeepers were not fully engaged in understand the Compact. To this end, COD ensured the inclusion of editors as key stakeholders in decision making as far as Compact communications is concerned. For four years, COD facilitated interaction of editors and Managing Editors with MCA-Malawi Management. The interactions included the presence of ESCOM, EGENCO and MNREM Management to ensure all partners interacted with the Media Managers.

Partnership with Government institutions: Government remains an integral partner in project implementation. With over 400 kms of transmission and distribution lines passing through rural and congested cities, it was a challenge to undertake outreach meetings without involvement of local leadership to support in communicating the Compact. As the Compact is country led, it was imperative to create ownership amongst district and community leadership. COD thus planned its communication activities with locals authorities to ensure that the message on the Compact and subsequent activities are well received and understood. Prior to entry into community, COD engaged and consulted with district authorities (District Executive Committees (DEC), Traditional Authorities, Police, CSOs) affected by IDP and ENRM project. COD used the forums to sensitize the stakeholders on the Compact and discuss their possible roles in Project implementation.

3.4.6.2 Outreach Activity

Communication played a key role in keeping stakeholders up to date on Compact Progress. COD utilized different mediums to reach out to its target audience. A Stakeholder Engagement Plan (SHEP) was developed to guide the directorates on key stakeholders to be reached out. The following was considered as guidelines to stakeholder engagement:

- (1) Their role in project implementation focusing on how influential are they in society and how they can use their influence to support implementation; and
- (2) The medium (radio, community outreach, radio programs)

Throughout the Compact, COD engaged stakeholders using different forums and in consideration of their availability. The outreach meetings were aimed at soliciting views that will inform MCA-Malawi on how to best manage or implement the Compact. Some of the key stakeholders reached out during Compact Implementation include; Members of Parliament, Cabinet Ministers, Government Officials, District Executive Committees, local leadership at community level, community members including PAPs, the Media, CSO, NGO's Private Sector and Construction Companies. Stakeholder's engagements were through conferencing/workshops, community outreach meetings and Mass Media. Community outreach and conferencing/workshop were the mostly used approach because they allowed instant feedback through discussions. All high level outreach meetings for parliamentarians, cabinet, DEC and private sector were facilitated by the CEO or Deputy CEO with communications team managing community outreach meetings with support from district officials.

Roles and Responsibilities: In planning and managing outreach meetings, COD did not work in isolation but engaged key partners in planning and undertaking its planned outreach meetings. COD partnered with district officials in undertaking all outreach activities. The objective was to create a sense of ownership and allow the district officials to take lead in reaching out to community members. COD participated in all outreach meetings to communicate the Compact and guide the proceedings. The district officials were also key in planning for such meetings at community levels. The officials communicated with local leadership to mobilize communities to attend MCA-Malawi meetings to be informed and asked questions directly to the project team. By engaging sharing such responsibilities, MCA-Malawi was easily accepted in the communities.

Managing Expectations: Expectations are usually a result of miscommunication or misunderstanding due to poor information flow or lack of updating targeted audiences. To manage expectations, COD ensured that District Officials and community members were constantly informed on Compact progress especially under the IDP. For example, COD undertook outreach meeting along the project a week before IDP planned activities. COD ensured that communities were reached out on:

- (1) The Compact, its goals and objectives including possibility of resettlement
- (2) Introduction on surveyors and pegging
- (3) Introduction of RAP Consultant (SMEC) and their role;
- (4) Census on RAP and the procedures
- (5) Formulation of Resettlement and Grievance Management Committees for RAP
- (6) Compensation procedures
- (7) Introduction of contractors and how they will engage with communities
- (8) Clearing the way leave
- (9) Foundation digging, tower construction and health and safety
- (10) Stringing and health and safety

COD undertook all the above outreach meetings to ensure that communities are aware of progress through direct interaction with MCA-Malawi, SMEC and contractors.

No Political Interference: In Malawi, most development projects are politicized resulting in lack of ownership especially when there is change in political leadership. With a five year project, there

is no room for delays or political interference that would deter progress. To strengthen ownership, COD outreach planning respected that Malawians support and have different political affiliations. COD in line with MCC's non-political interference planned and managed all its outreach meetings without engagement of politicians to speak on the project. Malawians were encouraged to participate in the project because this was their project which was not affiliated to any political party. COD did not allow the presence of any political color or material during its meetings neither being swayed to allowing politicians to speak at its events. This was eventually accepted and appreciated by community members and local leadership.

3.4.6.3 Lessons Learned

Throughout implementation, COD has learnt lessons that can improve communications and outreach activities for the second Compact. The major lessons learned is on the need to monitor contractors or consultants outreach activities. Findings by ISO or MCC Missions reveal the gap in communication as on examples below:

Occurrences of defilement and rape cases: Contractors as part of their contracts, were supposed to sensitize their staff and community members on health and safety, TIP and sexual harassment and others. The cases reported on defilement and rape are a clear indication that there are gaps in communication that have resulted in cases occurring. It was important for COD to jointly undertake outreach meetings with contractors on quarterly basis to ensure the messages are repeated and IEC materials disseminated to remind community members to protect the girl child.

3.4.7 Legal

3.4.7.1 Board Meetings

MCA-Malawi is governed by the Board of Trustees (the Board) which is an independent decision making body, final authority and responsibility for the oversight, direction and decisions of MCA-Malawi. In terms of composition, the Board has a total of seven members, of which three are from the Government and four from non-Government side as described in Chapter 2. The Board is also responsible for overseeing the overall implementation of the Compact in accordance with the Compact Document, the Program Implementation Agreement and all Supplemental Agreements. It also has the responsibility to perform the Government's rights and obligations in the oversight, management and implementation of the Program and all its activities subject to MCC's approval rights. In order to effectively implement its activities, the Board formed two sub-committees, the Appointments and Operations, and Audit and Finance sub-committees. Membership to the sub-committees was limited to the members of the Board. The sub-committees regularly presented information, opinions, recommendations and reports to the Board for its consideration and action.

It is a requirement under MCA-Malawi Trust Deed that the Board should hold as many meetings as necessary in order for it to discharge its duties and ensure the effective implementation of the Compact. In line with the Trust Deed, MCA-Malawi had two types of board meetings: regular and special board meetings. These were also referred to as ordinary and extraordinary board meetings. In respect of the regular or ordinary meetings, the Board was expected to meet at least once every quarter to transact its business while special or extraordinary meetings were constituted on a need basis mainly to transact urgent business matters related to the Compact. Both the regular and

special Board meetings were expected to meet certain minimum standards such as a quorum, provided in the Trust Deed, if they were to be considered as valid Board meetings.

During the course of the implementation of the Compact, MCA-Malawi held a total of 25 (twenty five) regular Board Meetings, as at the end of June 2018. The first of such regular board meeting was held on November 1, 2012. Five of the meetings were held prior to Entry into Force of the Compact, and the rest thereafter. In line with the Trust Deed, all the meetings were duly held on the scheduled dates except on two occasions: the first being the third Board Meeting which was scheduled to be held on April 11, 2013. The meeting was cancelled because it became apparent that a quorum was not going to be achieved during the sitting. The meeting was then rescheduled and held on May 24, 2013, which was still within the applicable quarter. The second meeting was the 17th Board meeting that failed to take place on the scheduled date of September 26, 2016. The meeting was called off due to, again, failure to establish a quorum. This cancellation once again did not affect the minimum requirement of holding quarterly regular Board meetings since another meeting had already been held in July, within the quarter. Overall, MCA-Malawi has had regular Board meetings every quarter in the past 5 years of Compact implementation in accordance with the Trust Deed. In terms of the special Board meetings, so far two were held as at end of June 2018. These meetings were held on May, 18, 2015 and November 15, 2017. The meetings were convened to discuss and pass resolutions on urgent matters that needed quick attention.

All the Board Meetings above proceeded after all the minimum requirements were met; and were held after the requisite notices were issued, and a quorum achieved. All deliberations at these meetings were duly recorded and minutes for all the meetings are available with MCA-Malawi. It is also worth noting that on July 8, 2015, the Board convened a meeting with the Stakeholders Committee mainly to clarify the role of the two bodies.

In terms of challenges, these were mainly experienced at the beginning of the implementation of the Compact. The challenges mainly arose due to the provisions of the Trust Deed requiring that all the three Government representatives to be available during the meetings to satisfy the quorum. This resulted in meeting scheduling problems and difficulties in achieving the quorum. This was however dealt with after the Board amended the Trust Deed changing the quorum requirements. The amendment only called for the majority of the members to be present including at least one Government representative. The last Board meetings were held in August 2018 and the final one in September 2018 as regular Board meetings. It is however expected that a special meeting may be held before the Compact Closure Date.

3.4.7.2 Stakeholder Meetings

MCA-Malawi's Stakeholders' Committee was mainly created to represent the constituencies of the project for the purpose of continuing the consultative process throughout Compact implementation. The committee was used primarily to inform the various constituent groups about Program implementation for it to provide advice and input to the implementation of the Program, as a feedback mechanism. The committee was, however, not meant to directly participate in the governance and decision-making of MCA-Malawi, but simply as a mechanism for on-going consultation throughout implementation of the projects. The Stakeholders' committee was set up in February 2014 and from the onset there were concerns regarding its terms of reference. During

the course of implementation of the Compact MCA-Malawi held only three Stakeholders' Committee meetings. The first meeting was held on April 7, 2014. It is worth noting that during this meeting, the committee expressed its concern on the seemingly overlapping roles between the committee and the board and wondered how the committee was going to work without encroaching into the Board's territory. The second and third meetings of the committee were held on May 21, 2015 and September 21, 2016. In terms of organization it became very difficult to hold subsequent meetings due to unavailability of the members.

3.4.7.3 Conditions Precedent Tracker

During the implementation of the Compact, MCA-Malawi had to fulfil certain covenants or Conditions Precedent. These were in three parts namely; (i) conditions for entry into force; (ii) conditions precedent for initial disbursement of program funding; and (iii) additional Government of Malawi covenants and commitments. All the conditions precedent for entry into force and for initial disbursement of Program Funding were met. The additional Government of Malawi covenants and commitments have been implemented and met respectively. As part of making sure that MCA-Malawi remains compliant, it was a requirement that every quarter the Conditions Precedents Report was updated during the submission of each Quarterly Disbursement Request Package for it to be eligible to receive funding for the next quarter. This was consistently updated since the first disbursement was made in December 2013.

3.4.8 Procurement

3.4.8.1 Procurement Plan

MCA-Malawi Project Directors in consultation with the Project partners (ESCOM and EGENCO) and MCC project leads, prepared semi-annual Project Procurement Plans (PPP) as provided in the MCA-Malawi Financial Plan. These PPPs included all procurements expected to be made under each project directorate that covered a minimum of a six month period. These approved PPPs were then fed directly into the main MCA-Malawi Procurement Plan (PP) drafted and finalized by the MCA-Malawi Procurement Director (PD), with support from the independent Procurement Agent (PA). The PP was then further subjected to approvals from MCA-Malawi executive management, the Board of Trustees (BoT), and subsequently the MCC prior to any listed procurements being launched publicly both locally and internationally.

The PPPs were further updated by the Project Directors as new requirements were identified or changes were deemed necessary. These updates were either for internal use and management of the activity, or if significant enough, the MCA-Malawi Procurement Director decided to revise the main PP. If such changes were effected, the revised PP was further subjected to either MCA-Malawi management and Board approval as well as the MCC's no objection dependent on the Program Procurement Guidelines (PPG) approval matrix.

3.4.8.2 Procurement Plan Reviews

Since MCA-Malawi came into force on September 20, 2013, a total of six (6) Annual Procurement Plans were raised and approved by the MCA-Malawi BoT and MCC with numerous amendments to each arising from needs of the MCA-Malawi project directorates and implementation process.

One of the six annual PPs was the CIF Procurement Plan which was prepared prior to entry into force and was discontinued only after the first Compact Procurement Plan was approved soon after coming into force. The CIF Procurement plan did not have any amendments subsequently; the Year 1 PP had 2 amendments; year 2 PP had 5 amendments; Year 3 PP had 5 amendments; Year 4 PP had 8 amendments; and Year 5 PP currently has 10 amendments. In total a record of 129 Procurements were launched with a threshold of more than US\$25,000.00 by the PA and have been a major driver in assisting with the Compact implementation and completion.

3.4.8.3 Contractor's Past Performance Reports

MCC's Contractor Past Performance Reporting System (CPPRS) mandates regular reporting on contractor performance, thereby facilitating information sharing and standardized use of information relating to contractor performance, so that better informed decisions can be made across MCC partner countries regarding the awarding of new contracts or maintaining current contracts with specific contractors who have done similar work previously in other Compacts. During the procurement process the Procurement Agent via the local MCC country office sought relevant CPPRS information on bidders or potential bidders and used such information in its evaluation and review panels at different stages of the procurement processes. The PA also ensured all procurements for values reaching the appropriate threshold for consultants or contractors had this requirement within the solicitation documents, and contracts, as the case may be, to ensure that contractors were aware of the CPPRS obligation and how information gathered as a result of compliance with the CPPRS might be used. Further information regarding the procedures and forms for use by any MCA Entity in performing these tasks is provided in the CPPRS PPG guidance notes and was available on the MCA-Malawi website.

To that end, MCA-Malawi project directorates, through the procurement team, compiled numerous CPPRS for each procurement resulting in a total contract awarded of, or estimated to be valued at, (a) USD200,000 or more for any consulting services and supply of goods and non-consulting services; and (b) USD5,000,000 or more for any goods supplied or works. Total value or estimated total value is based on the base period of performance as well as any option periods of performance. As a requirement, MCA-Malawi also ensured that contractor's or consultant's performance was submitted at least annually, or quarterly, if one or more aspects of their performance was problematic during the period of contract performance. As of October 2018, a total of 22 CPPRS of a target of 48 intermediary and Final CPPRS reports have been undertaken for contracts reaching the mandatory threshold within the 129 procurements undertaken. MCA-Malawi, out of its discretion, carried out CPPRS assessments even for contracts below the thresholds as this was deemed to be a very transparent and good method of contract value added assessment to the Compact by the procurement and contracting process.

3.4.8.4 Role of Procurement Agent

For Compact implementation, MCA-Malawi hired an independent Procurement Agent (PA), Cardno Emerging Markets, to administer the effective procurement of a variety of goods works, and services in furtherance of the Compact. The PA operated under the direction of the MCA-Malawi Procurement Director. The PA also assisted MCA-Malawi in the preparation of the periodic Procurement Plans, the procurement performance reports, and all related procurement

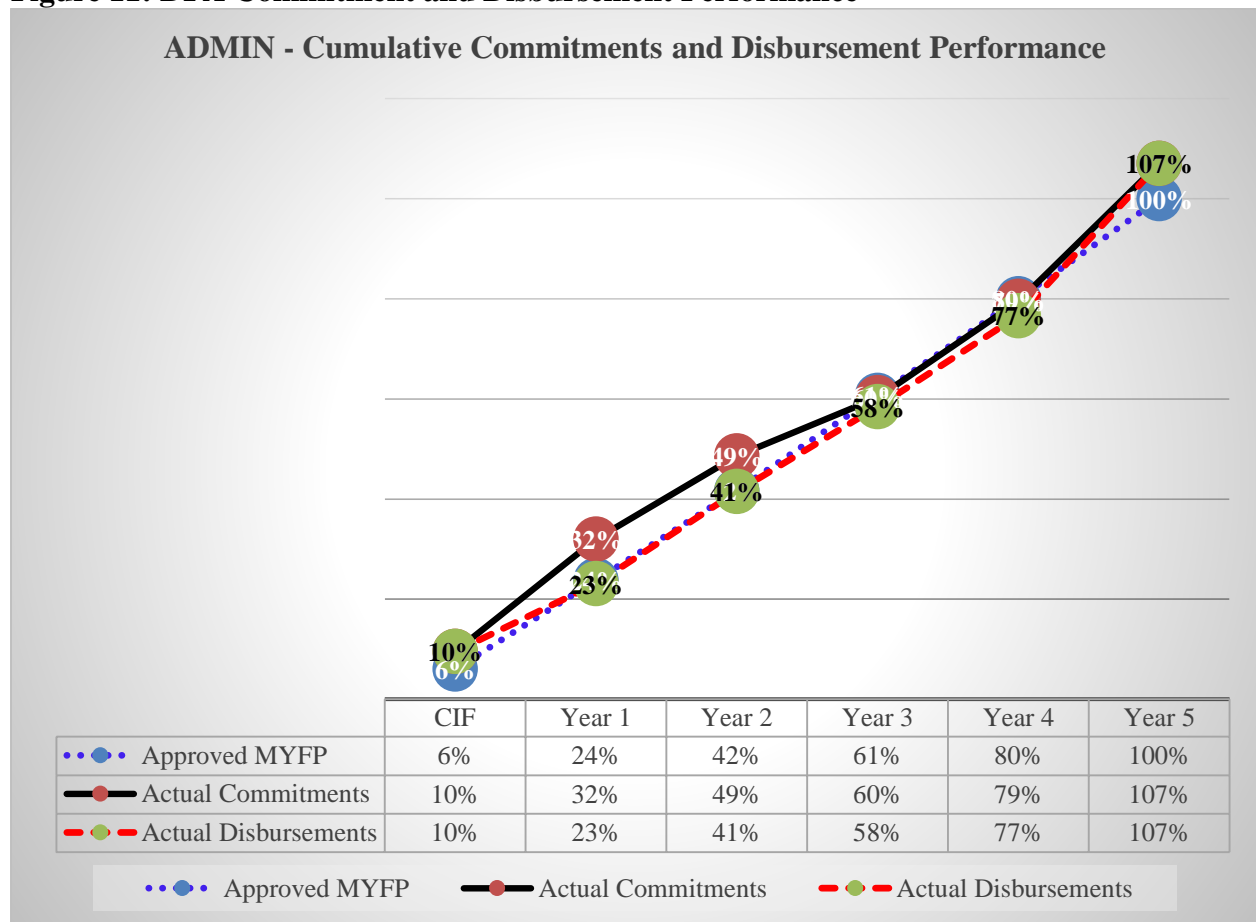
reports so requested by MCA-Malawi. In undertaking the procurements the Procurement Agent also ensured that all procurement requirements were adhered to in a manner consistent with the MCC PPG and all MCC and MCA-Malawi External Audit requirements.

3.4.9 Administration and Finance

The Administration and Finance Directorate provided overall financial management oversight and coordinated the finance activities across the various directorates such as periodic budgets and forecasts, quarterly financial reporting and also provided project support services such as human resource and administration, logistics, Management information Systems (MIS) and IT services. A total of \$32.9 million was projected to be committed under the Program Management directorate by September 30, 2018 representing 10% of total compact funds plus CIF budget ceiling and the whole amount is expected to be disbursed by Compact Closure Date (CCD).

Figure 11 illustrates the financial performance of the Administration and Finance Directorate during CIF and Compact Implementation period.

Figure 11: DFA Commitment and Disbursement Performance



As expected, the trajectory of Administration and Finance activities increased over time with targets meet in all fiscal years. In the final year, commitments were increased by 7% or US\$2.3

million with the bulk of the funds allocated to additional program administration activities and a small fraction allocated to costs associated with the Procurement Agent.

3.4.9.1 Personnel

MCA-Malawi employed a total of 55 staff with different qualifications and experience who were tasked with carrying out various jobs to support the implementation of the various Compact projects. Out of the 55 staff, 15 were key staff while the rest were support staff but duly qualified and experience in their respective areas of expertise. The staff turnover record was very low at an average of 5% over the compact period. The total personnel cost as at September 30, 2018 amounted to \$3.3 million.

3.4.9.2 Motor Vehicle Expenses

MCA-Malawi main offices were located in Lilongwe, with one sub-office in Blantyre while the project sites were located all over the country. This resulted in a significant volume of travel between the office and the project sites. To ensure mobility of MCA-Malawi staff in terms of projects implementation and monitoring activities, MCA-Malawi procured a total of 8 motor (utility) vehicles for MCA-Malawi operations. These vehicles remained in usable condition throughout the compact's implementation period. All the vehicles were duly insured and serviced to ensure that they were roadworthy at all times. MCA-Malawi also subscribed to car-tracking services to ensure security at all times and also to prevent abuse of resources. The total disbursed under Motor vehicle expenses at September 30, 2018 was \$482,000, with \$368,000 spent on the acquisition of various assets including the motor vehicles. MCA-Malawi also purchased 14 motor vehicles for use by project partners and grantees and 23 motor vehicles for the Consulting Engineer.

3.4.9.3 Travel and Accommodation Expenses

MCA-Malawi staff required accommodation while travelling to the various project sites. MCA-Malawi therefore signed Blanket Purchase Agreements (BPAs) with various hotels and lodges to ensure that staff who go out to the project sites were conveniently accommodated. The Finance and Administration Directorate provided necessary logistical support such as accommodation booking, preparation of accommodation. A total of \$2 million was disbursed as at September 30, 2018 and the total projected amount to be disbursed at CCD is estimated to be \$2.1 million.

3.4.9.4 Office Lease Expenses

The MCA-Malawi main office was located at Pamodzi House in Lilongwe City Centre. The offices were later found not to be adequate to accommodate the increasing number of staff and resident consultants. Therefore MCA-Malawi leased a second office within Lilongwe's Centre House Arcade Building belonging to MPICO Limited. Furthermore, one of the main projects involved the rehabilitation and upgrade of Nkula Hydro Power plant, which is located over 300 kilometers from Lilongwe but just a few kilometers from Blantyre. The Lilongwe offices were found to be logistically inconvenient in terms efficient access to Nkula by MCA-Malawi staff who had been assigned to oversee the implementation of this project. Under the Power Sector Reform Project

(PSRP), MCA-Malawi engaged consultants to carry out a number of reform activities for ESCOM whose head office is in Blantyre. The result was that MCA – Malawi leased an office in Blantyre in Unit House, to accommodate staff as well as consultants. The above three named offices were leased at various stages of the compact. As of September 30, 2018, the total disbursed under office lease was \$779,000 and is expected to reach \$846,000 at CCD.

3.4.9.5 Financial Reporting

MCA-Malawi was required to submit various reports to both MCC and the MCA-Malawi Board of Trustees. The Finance and Administration Directorate ensured high standards of finance management and operations of MCA-Malawi budgets and forecasts which were submitted to MCC and the Board of Trustees in the form of Quarterly Disbursement Request Package (QDRP) and quarterly financial reports. During the Compact, MCA-Malawi submitted 21 QDRPs and 20 financial reports. In addition to the QDRPs, MCA-Malawi also submitted other quarterly and monthly reports to MCC in the form of Data Calls. With the assistance of the Fiscal Agent, monthly financial reports were prepared for Management use since the inception of the compact and weekly disbursements and commitments, and budget versus actual reports were also produced and shared with Management, MCC Resident Mission and Directors.

3.4.9.6 Program Support

In addition to providing overall financial management oversight, the Finance and Administration Directorate also provided project support services to contractors by liaising with the Malawi Revenue Authority (MRA) and other Government departments to obtain various services during the compact implementation period in accordance with the Program Implementation Agreement:

- (1) Work permits for Contractors' foreign staff for both expatriates and artisans – over 800 work permits were obtained as at September 2018;
- (2) Duty waivers on imported project materials and equipment – on average 15 applications were submitted to the MRA on a monthly basis;
- (3) Facilitating the importation and re-exportation of project machinery and vehicles for contractors;
- (4) Facilitating the tax clearance and processing of tax refunds; and
- (5) Facilitating tax free purchases for contractors.

3.4.9.7 Internal Control Systems and Compliance

The Finance and Administration Directorate developed several policy documents during the Compact period aimed at ensuring compliance with MCC Guidelines, local statutes and MCA-Malawi led policies. The Fiscal Accountability Plan (FAP) was the main guiding document and was developed at inception and revised 5 times during the compact implementation period. Other documents included the Conditions of Service Manual and Transport Policy Manual. For employees, the employment agreement also formed part of the personnel policy guiding documents. In the year of closure, the Program Closure Plan was developed and has been the policy guiding document for all closure activities.

3.4.9.8 Fiscal Agent

MCA-Malawi hired the services of Cardno Emerging Markets as the Fiscal Agent (FA). The FA has been assisting the Finance and Administration Directorate in executing payments and preparation of quarterly budgets and forecasts and routine weekly and monthly financial reports and accounting. The FA also assisted in ensuring that there was compliance with MCC guidelines, internal control systems and other policy guidelines like the FAP.

3.4.9.9 Financial Audit

MCA-Malawi engaged the services of PriceWaterhouse Coopers (PWC) to carry out annual audits during the compact implementation period. There were also some MCC audits carried out by MCC auditors. The Finance and Administration Directorate led and coordinated all audits. A total of 5 audits were conducted during the compact period.

3.4.9.10 Management Information System

(1) SAP Implementation

The implementation of a Management Information System (MIS) using SAP software started on January 14, 2014 with project preparation phase where the main objective was to come up with project implementation guidelines. The project scope, charter, training plan, resource plan, implementation schedule, and change and risk management process were developed by a consultant from the USA, SITA Corp. These documents were circulated to the implementation core team which comprised of Director of Finance and Administration, Director of Procurement, Director of Monitoring, Evaluation and Economics, and the Fiscal Agent. It was agreed with SITA that these documents would be amended from time to time as the project was being implemented in order to incorporate new transaction processes and scope.

The solution scope for the project included the following business process areas:

- **Finance:** General Ledger, Accounts Receivable, Accounts Payable, Asset Accounting, Cost Controlling
- **Funds and Grants Management:** Master Data, integration for Finance, Controlling, Procurement and Inventory Management processes
- **Materials Management:** Consumable Purchasing, Procurement of inventory items, Inventory Management, Procurement Scheduled line items and Logistics invoice verification
- **Project System:** Project tracking and costing (up to the WBS element)
- **Budgeting:** Base ECC Budgeting

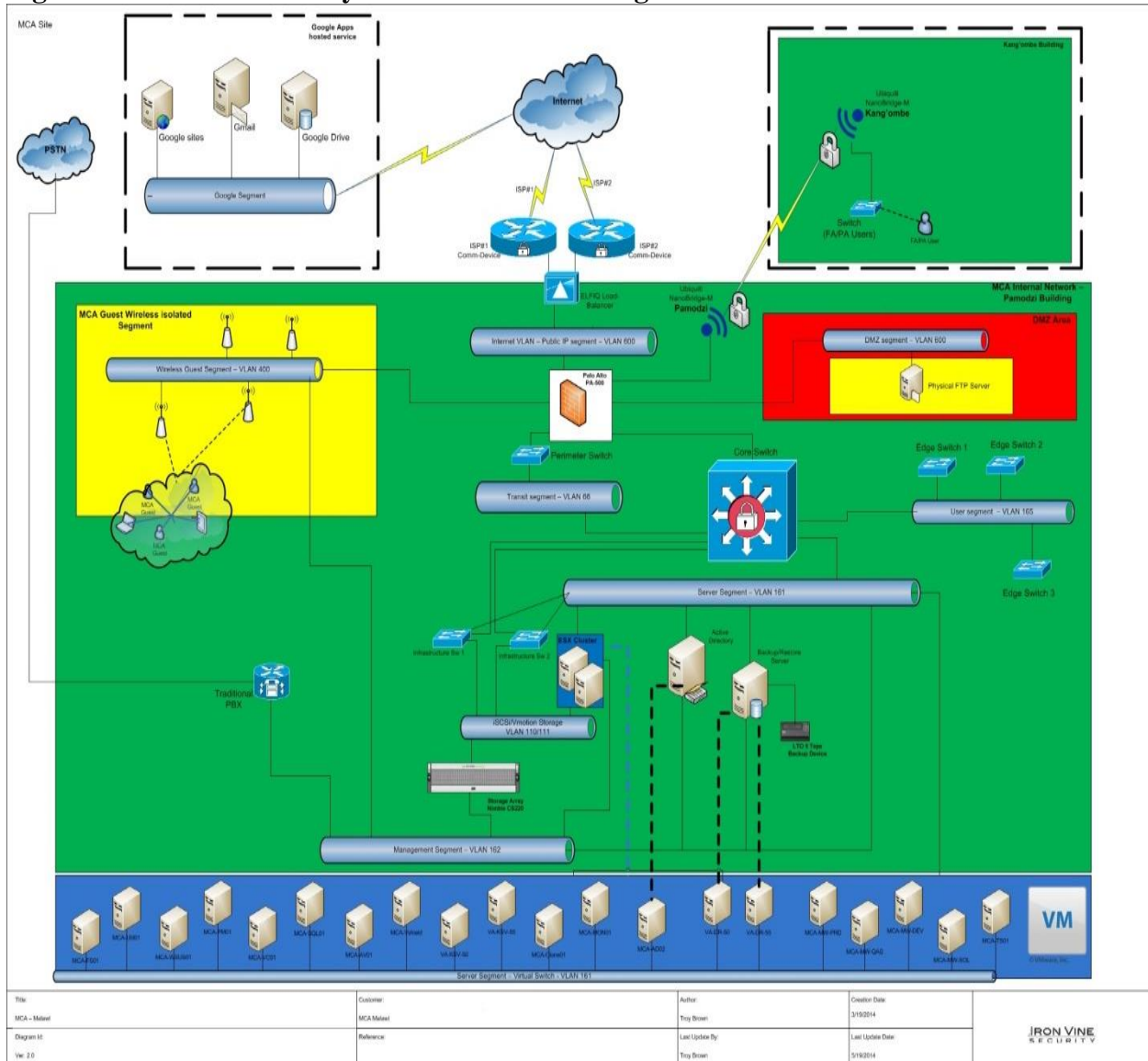
The solution was delivered based on the available SAP best practices and a SITACORP SwIFT Solution was configured to the needs of MCA-Malawi. Projects were structured using the work break down structure (WBS) elements in SAP. All activities, sub-activities and tasks were represented as WBS elements in a hierarchy. The training approach followed was to train first the

core team as Trainer of Trainers. The project implementation of MCA-Malawi MIS costed \$702,600.

(2) IT Infrastructure Configurations

The vision for the MCA-Malawi MIS project was to establish a modular Management Information System in order to enable MCA-Malawi to better manage, save time, and more accurately report on the MCC Malawi Compact in terms of deliverables achieved and funds committed and disbursed. The MCA-Malawi infrastructure system was designed and implemented based on the proof of concept of MCA-Malawi prototype. The Infrastructure provided MCA-Malawi a standardized configuration to support day-to-day operations. The designing of the infrastructure include both physical and logical components. **Figure 12** presents a high-level system architecture diagram, which shows the various components of the MCA-Malawi system.

Figure 12: MCA-Malawi System Architecture Diagram



As illustrated in **Figure 12**, the MCA-Malawi infrastructure included several servers, both physical and virtual, firewall to allow all providers access to the systems in a protected manner, networking switches, load balancer for allocating of internet resources within the network, etc. The virtualization technology was based on VMWare VSphere 5.5. This setup was done in consultation with both MCC who needed a standardized setup for all MCA's as well as SITA Corp who had specifics for the functioning of the SAP. For backup MCA-Malawi implemented a disaster recovery site with emphasis on SAP access for all users. The infrastructure configuration costed \$92,000: however, this did not include the cost of procuring the actual physical infrastructure and its associated software. In both projects, involvement of key users was essential for the success of the projects.

CHAPTER 4

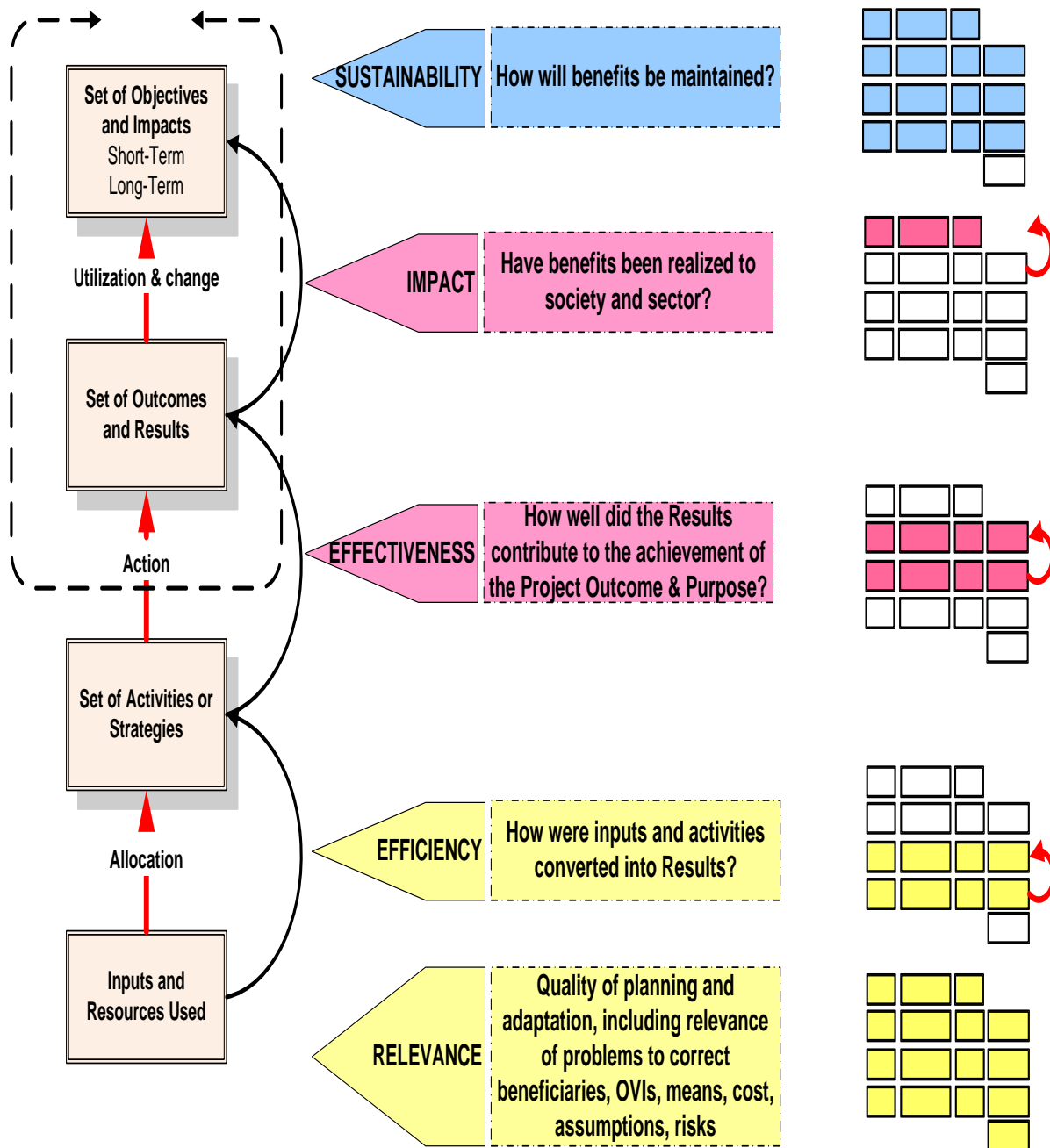
SUMMARY AND CONCLUSION

Chapter 3 of this report presented all activities that were agreed and implemented by MCA-Malawi during the compact implementation period. During compact implementation, the power sector has been the center of attraction owing to the fact that unreliable power supply still remains a constraint to economic growth in Malawi. The major concerns in the power sector continue to be erratic water flows in the Shire River affecting electricity generation from hydropower plants (HPP), and a utility that was creditworthy during the majority part of the compact implementation which turned technically insolvent towards the end of the compact period. Compounded by the lack of adequate generation capacity and growing electricity demand which continue to lead to frequent load shedding and blackouts, this continues to negatively affect electricity consumers in Malawi both at household and industrial level.

On the other hand, MCA-Malawi strongly believes that the compact has created a number of opportunities especially in creating an enabling environment for private sector participation and the investments of the Compact will continue to be a catalyst for future expansion of the power sector. Major opportunities created include the improved electricity grid system that is now capable of handling up to 1,000 MW of throughput capacity; and the improved rules and regulations in the power market that include amended electricity act, IPP framework, market rules, grid codes, system and market operator, revised tariff methodology, and the unbundled utility to promote competition in electricity generation. However, MCA-Malawi notes some weaknesses that if not addressed, will continue to hamper the progress achieved during compact implementation. These weaknesses are largely due to slow implementation of power sector reform recommendations made by the various consultancies that MCA-Malawi funded.

In the following sections, the performance of the compact is assessed based on the key results-based framework that is normally used in Project Management. **Figure 13** illustrates the stages of results-based evaluation used in this section which include the following: relevance of compact activities to poverty reduction and economic growth; efficiency of activities implemented; effectiveness of outputs implemented; an analysis of envisioned impacts; and sustainability of compact interventions.

Figure 13: Results-Based Evaluation Framework



4.1 Relevance of Compact to Poverty Reduction

Chapters 1-3 of this report have outlined the relevance of the interventions implemented, stakeholders involved, and the process that was used to develop the final interventions to be implemented. The stages followed a detailed project cycle management with the following steps as illustrated in **Figure 14**.

4.2.1 Time

About 30% of procurement contracts implemented by the MCA-Malawi were affected by time to complete the agreed tasks. The major reasons for such delays were due to delays in procuring consultants and contractors, delays in technical design reviews and approvals, delays by project partners to review submitted reports, and delays in implementing proposed recommendations by Project Partners. Out of a total of 153 procurement contracts, 30% implemented were not completed on time.

4.2.2 Cost

Unlike other Compacts implemented by MCC, MCA-Malawi was able to realize savings from other interventions procured. This implies that although the Compact implemented the agreed activities as planned, more activities were re-scoped to cater for the savings made. The projects that benefited from cost-savings included IDP (Nkula A refurbishment, SCADA, package 3 lot 1 and 2), PSRP (additional computer equipment under MIS, Cetrix licenses, SCADA integration) and ENRM (additional dredgers, DMPA). Overall, the MCA-Malawi compact benefited by implementing more activities than planned of which the results entail more benefits to the Malawian people.

4.2.3 Quality

The interventions implemented by MCA-Malawi much as they were affected by time and cost, the outputs are regarded as high value and quality. Most IDP and ENRM Project interventions are state of the art technology and benefited largely from strict quality control by the Consulting Engineer, Fichtner. Similarly, the recommendations made by the various consultants under PSRP were based on international standards and benchmarks and if fully implemented, the power sector industry in Malawi would improve greatly and be able to be compared to other industries within the region.

4.3 Effectiveness of Compact Results

4.3.1 Infrastructure Development Project

The Infrastructure Development Project has significantly improved the availability, reliability, and quality of the power supply in the ESI in Malawi. This has been achieved by increasing the throughput capacity from 260 MW to 960 MW by constructing two new 400 kV substations at Phombeya in Balaka and Nkhoma in Lilongwe, two new 132 kV substations at Bunda Turnoff in Lilongwe and New Bwengu in Rumphi district, a total of 366 kilometres of OHL at 400, 132, 66, 33, and 11 kV, and by stabilizing the national electricity grid through increased MVA capacity at transmission by 809 MVA and distribution by 97 MVA in various substations across the country. Furthermore, the refurbishment of Nkula A HPP using MCC funding, which was commissioned in 1966, increased its efficiency by 50% from an installed capacity of 24 MW to 36 MW.

The key transmission substations of Phombeya in Balaka, Nkhoma in Lilongwe, and New Bwengu substations in Rumphi will play a major role in the future when Malawi interconnects to the Southern Africa Power Pool (SAPP). With resources from the World Bank, KfW, and the African

Development Bank, the Malawi-Mozambique 400 kV double circuit OHL interconnector, which is expected to commence in January 2019 and commissioned in 2023, will land at Phombeya substation, bringing in an additional 1,000 MW of throughput capacity as well as power that would furthermore improve the economic rates of return of the Compact investments.

Additional investments such as the Kamm’wamba Coal Fired Power Plant that will be situated 30 kms south of the Phombeya 400 kV substation and commissioned in 2021-22 will also transmit its power through this major transmission substation in Malawi. The IDP investments will also play as a catalyst to future generation, transmission and distribution projects that have been planned in the approved Integrated Resource Plan of 2017 (IRP, 2017). Therefore, MCA-Malawi is confident that the specific project objective that was set out to be achieved for the IDP was fully met during compact implementation through the interventions made.

4.3.2 Power Sector Reform Project

The Power Sector Reform Project (PSRP) sought to create an enabling environment for future expansion of the power sector. This was achieved by strengthening sector institutions such as MNREM, MERA, ESCOM and EGENCO. Furthermore, the compact resources and enhancing regulation and governance of the sector by rebuilding ESCOM into a financially strong, well-managed utility and developing a regulatory environment that supports public and private investment in new generation capacity and expanded access. The key results achieved under PSRP were through consultancies and they were all completed in full as reflected in section 3.5.2

In order to gauge the effectiveness of PSRP interventions, **Table 4** analyses the yearly performance on agreed semi-annual targets. The agreed list of key performance indicators that were tracked since entry into force included the following:

Table 4: ESCOM and EGENCO Performance on agreed SAR KPIs

SAR KPI	Unit	Base Year	Year 1	Year 2	Year 3	Year 4	Year 5 ²	Target	Overall
Operational Efficiency									
System Losses	%	22	23.7	24.5	21.9	19.6	17.1	21	Target Surpassed
Bad Debt	Ratio	0.25	0.42	0.47	0.51	0.61	0.56	0.02	Target not met
Maintenance Ratio	Ratio	1.29	0.32	0.93	1.41	0.47	1.06	100	Target achieved
Outage Duration	Hours	3.65	3.36	3.81	3.06	2.67	3.45	2.15	Target not met
Outage Frequency	Ratio	1.40	0.97	1.08	2.36	1.88	2.59	0.78	Target not met
Average Collection Period (Annual)	Days	72	75		75	88	108	45	Target not met
Average Creditor Days (Annual)	Days	27	156	40	72	106	96	60	Target not met
Improved ESCOM Financial Health									

² As at December 2017.

SAR KPI	Unit	Base Year	Year 1	Year 2	Year 3	Year 4	Year 5 ²	Target	Overall
Operational Efficiency									
Cost Recovery Ratio	Percent	161	155	128	140	88	154	120	Target achieved
Acid Test	Ratio	2.98	2.58	3.29	0.57	0.28	0.09	1.00	Target not met
Current Ratio	Ratio	6.48	6.25	7.03	3.76	2.03	1.28	3.00	Target not met
Gearing Ratio	Ratio	0.64	0.25	0.24	0.26	0.51	0.67	0.66	Target achieved
Average Cost of Electricity Billed	US\$/kWh	0.05	0.06	0.11	0.09	0.13	0.09	NA	NA
Actual Tariff	US\$/kWh	0.08	0.09	0.09	0.08	0.08	0.08	0.13	Target not met
ATAF	Ratio	1.32	1.27	0.87	0.73	0.68	0.68	1.00	Target not met

The success of the PSRP interventions can also be reviewed based on the extent to which the PSRP recommendations were implemented by the various project partners. Out of 499 recommendations made by the various consultants under PSRP, 185 recommendations were fully implemented, representing 37%; 141 recommendations are in progress, representing 28%; while 173 recommendations are yet to be implemented, representing 35%.

4.3.3 Environment and Natural Resources Management Project

The Environment and Natural Resource Management (ENRM) Project that seeks to mitigate the growing problems of aquatic weed infestation and excessive sedimentation in the Shire River Basin. To reduce the costly disruptions to Malawi's hydropower generation, the project will invest in weed and sediment management and promotion of improved environmental and natural resource management in upstream areas. The ENRM project also includes a Social and Gender Enhancement Fund (SGEF) for the empowerment of men and women to engage in sustainable land management practices. The key results achieved under ENRM are illustrated in **Table 5**.

Table 5: ENRM Completed Tasks

Project Activity	Completion Date
WEED AND SEDIMENT MANAGEMENT	
Liwonde Barrage: Purchase and use of additional harvester. Two harvesters were bought including conveyer accessories by JGH/Aquarius and were delivered in December 2017. Additional activities implemented include the purchase of two tipper trucks which are expected to be delivered by August 2018	August-2018
Nkula Plant: Trash diversion barrier for Nkula head pond. This was a failed procurement in June 2017 and MCA-Malawi is in the process of relaunching. Rehabilitation of dredger for Nkula. This was taken out of scope and instead an extension to an existing Dredged Material Placement Area (DMPA) at Nkula HPPs and expected to be completed by August 2018	Aug-2018
Tedzani Plant: Trash diversion barrier for Tedzani head pond and the purchase and use of dredger for Tedzani.	De-scoped
Kapichira Plant: Trash diversion barrier for Kapichira head pond was removed. This was replaced with a new sub-activity that aims at the development of a new Dredged Material Placement Area (DMPA) for Kapichira. This was delivered in September 2018. Purchase and use of dredger for Kapichira expected to be delivered by September 2018 by Ellicott Dredgers. Additional activities at Kapichira include procurement of two tipper trucks, a backhoe loader and a sediment monitoring equipment to be delivered by August 2018	September 2018
ENVIRONMENT AND NATURAL RESOURCES MANAGEMENT	
Support to communities, and decentralized institutions in application of policy and legislation and in improving their participation in environment and natural resources management decision making	Aug-2018
Management and sustainable utilization of forests and promotion of individual woodlots, tree planting and management	Aug-2018
Piloting demonstrating and promoting on-farm soil and water conservation measures, sustainable crop techniques including conservation agriculture and agroforestry	Aug-2018
Reduce demand for and improve sustainability of wood energy use	Aug-2018
Breeding, introduction and management of bio-control agents and monitoring of aquatic weeds	De-scoped
SOCIAL AND GENDER ENHANCEMENT FUND	
Community engagement to improve joint decision making, women's and men's empowerment and sustainable management of natural resources through proven participatory methodologies	Aug-2018
Developing community-based tools for improved and equitable land management	Aug-2018
Leadership Training for Women	Aug-2018
Economic empowerment of women through business skills, marketing and/or other approaches	Aug-2018

As illustrated in **Table 5**, all planned activities that were agreed in the MCC Malawi Compact Document were effectively implemented and completed. Only two activities were de-scoped: Trash diversion barrier for Tedzani head pond and the purchase and use of dredger for Tedzani; and Breeding, introduction and management of bio-control agents and monitoring of aquatic weeds.

4.4 Sustainability of Compact Results

4.4.1 Sustainability of Infrastructure Development Project

The success of IDP interventions rely on the ability of ESCOM and EGENCO to maintain the assets post-compact. With assistance from MCA-Malawi, ESCOM and EGENCO developed sustainability plans to oversee the continued use of Compact infrastructure assets. The EGENCO commissioning and sustainability plan presented how the utility will commission, operate and maintain the Nkula A HPP, weed harvesters, shore conveyor, tippers, and dredgers they benefited from the MCC Malawi Compact. The key areas that both EGENCO and ESCOM have highlighted that will ensure that the sustainability of Compact investments come to fruition include: (i) capacity building – staff recruitment, training and attachment of staff to contractors implementing the projects; (ii) stocking of critical spare parts for the maintenance of the installed machines, auxiliary plants and ancillary plants; (iii) acquisition of supporting equipment; (iv) institution of maintenance, environmental health and safety standards and procedures; (v) financing of operation and maintenance; and (vi) requirement for contractors to furnish them with all project documents. In addition to the sustainability plans, the two utilities have committed to ensuring that Social and Gender issues are incorporated in their planning and operation. The key activities targeted under social and gender include: (i) prioritizing employment of local workers; (ii) developing a policy for prohibiting sexual harassment of any kind at work place; (iii) providing good working conditions in accordance with Malawi labour laws; (iv) providing free accessible functional gender sensitive grievance redress mechanism; and (v) performing public awareness campaigns on project activities in nearby villages.

4.4.2 Continuation of Power Sector Reforms

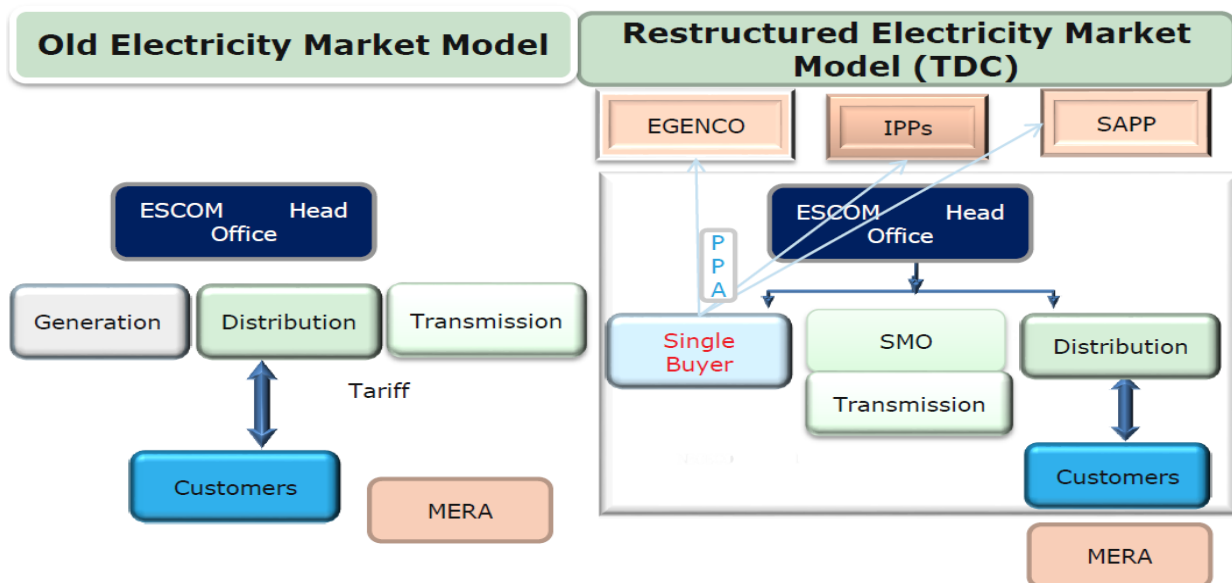
Despite the successful implementation of PSRP interventions under the MCA-Malawi Compact as well as the implementation of recommendations by all Project Partners, the success of the MCC Malawi Compact, which is expected to be a catalyst to the future expansion of the power sector in Malawi, will not be realized if the recommendations made are not implemented in full: and if not implemented in full, Malawi should expect more challenges being faced with the end result being few IPPs entering the power market to boost the needed generation capacity for Malawi to grow. Giving the Malawian people access to electricity is a key condition for economic development and therefore poverty reduction. The MCA-Malawi Compact has successfully increased the reliability, availability and quality of the electric grid by adding a throughput capacity from 260 MW to 960MW. What now remains is to increase the supply of electricity to fully utilize the existing throughput capacity that the Compact has installed for the benefit of the Malawi population as well as industrial and commercial activities needed to generate income through employment and increased value added.

Through the numerous studies conducted by MCA-Malawi under PSRP, the constraints faced by the public power utilities in the country especially due to limited financial resources necessitates the need to attract private sector investments that would increase and improve the quality of supply. This will only be achieved if an efficient restructured electricity market is effectively created. This will rely on three major factors, namely:

- (1) Having a strong financial basis especially for the newly created power utility, ESCOM, that should be financially sound and creditworthy;
- (2) A clear legal and regulatory framework that guides investments with an emphasis of creating the appropriate institutions that are independent to manage the electricity supply industry, vis-à-vis, the creation of an independent Single Buyer; and
- (3) Transparent, robust market rules and price mechanisms (no price controls) that ensure fairness and efficiency of market operations and transactions that are aimed at clearing markets.

Figure 15 illustrates the new regulated structure that has been in force since January 2017.

Figure 15: New Restructured Electricity Supply Industry



As of January 2017, the new ESI moved from an old electricity market model where ESCOM was a monopoly with a vertically integrated structure to now one where a new generation company was created (EGENCO) to compete with new entrants or IPPs. An important addition to the ESI include the Single Buyer (SB) whose responsibility is to ensure long-term planning based on least cost options, organizing tenders, analyzing unsolicited proposals, as well as purchasing power from IPPs; the System and Market Operator (SMO) whose responsibility is to guarantee to all generation companies an independent, fair dispatch and nondiscriminatory access to the entire transmission grid; and an unbundled power utility that is financially and legally sound with segments that represent independent business units of Generation, SB, SMO, transmission and distribution/retail functions that have a clear transfer pricing mechanism.

In summary the following milestones need to be achieved if Malawi is to effectively attract private sector generation at reasonable prices:

- (1) End-User tariffs must be cost-reflective including full pass-through of generation costs procured to the maximum extent possible by transparent process (open tenders).
- (2) An ESCROW (or BST) account should be in place as well.
- (3) A credible power sector organization should be in place based on the principles set in the Electricity Act, as amended, especially the full creation of SB and SMO to be completed.
- (4) A Proper IPP framework must be implemented and the institutions involved in the process of planning and procurement must be ready and fully empowered.
- (5) A sound and credible regulatory framework must be in place and fully enforced. In particular, MERA should be given the role to fully implement tariffs, monitor the development of the sector, and grant licensees.
- (6) Enhanced procedures must be introduced to plan and operate the market in a transparent and efficient manner.
- (7) Permanent transitional measures must be avoided.

In summary, MCA-Malawi feels that the reform process is on track with most of the enabling framework approved by GOM as well as some activities fully implemented or are still under implementation. However, it is critical that the GOM and other power sector stakeholders continue to deliver on reform commitments so that results are consolidated and potentially sustainable. Nevertheless, MCA-Malawi believes that the successful implementation of all the reforms and adoption of the new market rules will only be achieved if GOM, MNREM, MERA and ESCOM management provide good leadership that is necessary to take Malawi to the next level of power sector development with an emphasis on attracting private sector participants into the ESI.

4.4.3 Continuation of ENRM Activities in the Upper and Middle Shire River

Much as the Compact implemented a number of activities related to environment and natural resources management, these activities were seen as addressing short- to medium-term mitigating issues that affect the operation of the three hydro-power plants along the Shire River Basin. In addition to the interventions implemented which are detailed in Chapter 3, the ENRM activity has also established a Shire River Basin Environmental Support Trust (Shire BEST) to support long-term sustainable land use and management practices in both the upper and middle Shire River basin. Among some of the sustainable initiatives that the Shire BEST will promote is the creation of a Payment for Ecosystem Services (PES) mechanism. While the Shire BEST was established and some key activities such as strategic plan, business plan, M&E plan, and Implementation Framework completed, the financing of the PES mechanism is still outstanding. Much as a levy was included in the approved electricity tariff that became effective on October 1, 2018, other stakeholders benefiting from the Shire River Basin are still expected to contribute towards the PES to fund the natural resources restoration activities in the upper and middle Shire river catchments after the compact end date.

Alternative financing sources have also been explored, particularly among the water resource users along the Shire River such as Blantyre and Southern Region Water Boards, Illovo Sugar Company, Press Cane (formally known as Ethanol Company), EGENCO and ESCOM, who have been

approached to include the implementation of ENRM and SGEF activities in their respective annual budgets. Only EGENCO has thus far responded to the proposal by including a budget of US\$400,000 per year for the next four years. Other firms are yet to commit resources to the Shire BEST fund. Consequently the sustainability and continuation of ENRM and SGEF activities in the upper and middle Shire river basin will be subject to the continued availability of financial resources.

4.4.4 Post Compact Monitoring and Evaluation

The sustainability of Compact results also lies on the possibility of tracking results beyond compact end date of September 20, 2018. As a result, MCA-Malawi, working together with the Ministry of Finance, Economic Planning and Development, Monitoring and Evaluation Department, identified a Point of Contact to carry on the M&E functions once MCA-Malawi is dissolved in January 2019.

In the process, the MEED developed the post-compact M&E Plan which describes post-compact monitoring and evaluation activities, the individuals and organizations that will implement and support these activities, budget for the post-compact monitoring and evaluation which will utilize resources from both MCC and Government of Malawi, and document the role the GOM will play in compact results dissemination. The tracking of results post-compact will be vital especially in gauging the success of the compact results. Thus, the post-compact M&E Plan is considered as a binding document, and failure to comply with its stipulations could be regarded as violation of the agreement between MCC and the GOM.

During the period October 2017 to September 2018, MEED worked closely with two point of contacts from the Monitoring and Evaluation Department to acquaint them with the process of data collection and the evaluation processes that were implemented. Assuming no GOM posting, MCA-Malawi believes that they will exercise their duties accordingly to report on progress on agreed key performance indicators to be tracked post-compact, assuming that no GOM postings will occur in the near future to move the trained Economists to other Ministries or Departments.

4.5 Compact Governance

4.5.1 Independence of MCA-Malawi

At the heart of independence is the act of making and implementing decisions without any external influence. The MCA-Malawi implemented the Compact on behalf of the GOM. The organization was created as an independent Government Trust on October 2, 2012 with an independent Board that comprised members from the private sector, civil society organizations, and GOM. All decisions ended with the Board which met frequently almost on a quarterly basis to guide the operations of the MCA-Malawi. It is with such independence of the Board, the Executive Management and staff that MCA-Malawi was able to fulfil its mandate given to achieve the Compact Goal and the Program Objective by successfully implementing the three projects of the Power Sector Revitalization Project. Furthermore, it was within the spirit of MCA-Malawi Board, executive management and staff not to engage, directly or indirectly, in any activity prohibited under the Compact, and therefore operated throughout the Compact implementation period in

accordance with the requirements set forth in the Accountable Entity Guidelines provided in the PIA.

In terms of operational activities, MCA-Malawi procurement processes, which are often a bone of contention in many organizations, were implemented independently and spearheaded by an independent Procurement Agent responsible for advertising, evaluating, and awarding of contracts on behalf of MCA-Malawi. During contract management, though MCA-Malawi directorates were responsible for managing contracts that MCA-Malawi had committed, the payment of deliverables was also done independently by an independent Fiscal Agent. As far as recommendations made by the various consultants, consulting engineer, and contractors, the implementation of such recommendations, while important to improving the power sector in Malawi were jointly agreed by MCA-Malawi and Project Partners.

4.5.2 Transparency Initiatives

Transparency is viewed by MCA-Malawi based on three factors: openness, effective communication and being accountable to the Malawian people. In terms of openness, MCA-Malawi believes that the process that it adopted to identify the projects, negotiations undertaken with MCC, and implementation of agreed project tasks, were all in line with the Compact objectives. Recommendations on the appropriate reforms to be undertaken by Project Partners were also openly discussed through workshops. Furthermore, these reforms were discussed at Semi-Annual Reviews, of which MCA-Malawi has undertaken seven of these sessions to showcase progress on the Compact, Compact commitments and disbursements, as well as progress on agreed reforms to be implemented. Furthermore, the cross-cutting functions within MCA-Malawi such as the Communications and Outreach Department, Social and Gender Inclusion Department, and Legal Department played a big role in sensitizing the communities affected by the project interventions throughout the Compact implementation period. The MCA-Malawi website (www.mca-m.gov.mw), MCA-Malawi Facebook page, MCA-Malawi twitter page, community outreach meetings, breakfast meetings, stakeholder engagement meetings, parliamentary outreach meetings, cabinet meetings, media sensitization meetings, media editors' forum, media tours, Semi-Annual Reviews, and trainings were, among others, used as communication channels to report on Compact progress and to showcase results of the Compact.

4.6 Conclusion

4.6.1 Best Practices and Lessons Learned

Much as it was a challenge to implement and be able to disburse US\$350.7 million within 5 years of Compact implementation, MCA-Malawi believes that it has set the pace for future GOM projects to be implemented. The MCC criteria on how much funds are allocated to an eligible country is also based on its absorptive capacity and the resources allocated in the first compact could not surpass the Compact fund allocation made in 2011. The successful implementation of the Compact by committing 95% of Compact funds and fully disbursing them in the process, this is empirical proof that programs of this nature with the right governance structure and well qualified staff can be effectively implemented, especially in the power sector that needs significant investments of over US\$7 billion to be channeled in order to fulfill GOM objectives of increasing access to power to 50% as well as improving the business environment so that employment can be

increased as well as value added to Malawian products. This success had a number of best practices as well as lessons learned that are documented in this report.

4.6.1.1 Best Practices

Independence of MCA-Malawi: In order for GOM to effectively implement programs of this nature, the Program Implementing Unit (PIU) needs to be relatively independent and able to make its own decisions. During Compact implementation, the MCA-Malawi Board of Trustees were the final decision making body on issues related to MCA-Malawi operations and implementation. Through MCA-Malawi experience, we believe that this was at the helm of implementation success. Independence, however, does not mean that there was no oversight from both GOM and MCC as key stakeholders in the agreement to oversee how implementation of the Compact was being managed. We expect this to be the same with the institutions that MCA-Malawi has worked with to ensure that they are efficient, transparent and accountable to the citizenry: these institutions include MERA, EGENCO, ESCOM and MNREM.

Transparency and accountability of MCA-Malawi: Another best practice that should be emulated is related to how transparent and accountable MCA-Malawi has been throughout the compact implementation process. Results were showcased at different intervals of the Compact implementation process as well as how much funds were being committed and disbursed annually and cumulatively. Furthermore, different forms of stakeholder engagements were used to disseminate Compact results either through online print and social media groups, workshops, media forums, parliament and GOM meetings. These meetings were vital especially in moving some of the reform recommendations under the Power Sector Reform Agenda.

Post-Compact sustainability plans for Project Partners: Most projects implemented in Malawi do not have a sustainability plan developed before the project closes. This eventually makes the sustainability of the interventions implemented not to bear their intended results in the future. The key projects implemented by the Compact include the construction and rehabilitation of generation, transmission and distribution infrastructure s and capacity strengthening on the new reform interventions recommended and implemented by the Compact. In order to sustain these interventions, MCA-Malawi engaged the Project Partners especially ESCOM and EGENCO to develop sustainability plans that would ensure that the interventions that have been successfully implemented through the Compact continue to benefit the Malawian people. MCA-Malawi believes this to be a good practice that ought to be emulated in future programs of this nature.

Frequent engagement with project stakeholders and beneficiaries: Stakeholder consultations are also regarded as one of the best practices that MCA-Malawi undertook. Before the commencement of projects, at project design, and during project implementation, communities were sensitized about the benefits of the Compact. For those who were Project Affected Persons (PAPs), they were effectively identified and adequately compensated to ensure that they were not made worse off because of Compact interventions. In addition, the Compact made sure that all options were made available to PAPs including, but not limited to in-kind compensation (MCA-Malawi has constructed 207 modern households and related infrastructure) to PAPs, Livelihood Restoration Plans (LRP) focusing on business training, financial literacy, hawking, among others.

4.6.1.2 Lessons Learned

Despite a successful implementation of Compact interventions, there are a few lessons that MCA-Malawi would recommend to GOM as well as future Compacts/programs that are to be implemented elsewhere.

More to be done on power sector reforms: For PSRP interventions, through the numerous studies that were conducted, over 500 recommendations were made in order to reform the ESI in Malawi. About 40% of the recommendations made were fully implemented, close to 30% of the recommendations were in progress of being implemented as of close of compact, while the remaining 30% are still to be implemented by the responsible project partners. The challenge that was faced was that, unlike IDP projects, there was no independent project management team to oversee the implementation of these recommendations. In addition, the mandate to oversee the implementation of such recommendations was also not built in the terms of reference of all consultants hired. Much as the implementation of such recommendations must be the ultimate responsibility of the Project Partners, MCA-Malawi could have potentially supported strategies for increased uptake of recommendations by hiring a Power Sector Reform Consulting Firm with clear milestones agreed to specifically oversee the implementation of all PSRP recommendations made. Some critical decisions to be made such as the creation of a Single Buyer (SB) Directorate within ESCOM, for example, was expected to be implemented in Year 3 of Compact implementation. However, to date, this Directorate is yet to be created within ESCOM and operational. This directorate is important especially as it involves dealing with IPPs and the lack thereof entails that the new power market industry is incomplete. This creates uncertainty especially to potential IPPs if the market will function efficiently and effectively without the key institutions being in place. Thus, the creation of an independent, impartial and trustworthy Single Buyer is needed to ensure that the reforms are complete in the ESI.

Assurance of cost-reflective tariffs to meet electricity demand in the power market: Having the right price mechanism adopted that is able to clear the electricity market in terms of increasing generation supply to meet demand is important. This assurance can only come in if the power market industry adopt cost-reflective tariffs. Cost-reflective tariffs have got an economic and social benefit that the Malawian people need to comprehend. On the economic front, during the compact implementation period, MERA approved a base tariff increase that became effective in April 2014. This tariff was expected to be implemented in four phases: 13.5% in year 1; 18.18% in year 2; 8.9% in year 3; and 1.9% in year 4. Much as the first base tariff increase was effected fully on April 4, 2014, the second tranche was partially implemented with the remaining two tariff increase not effected by MERA. As of December 2017, the average tariff that ESCOM charged its customers was at US\$0.08 per kWh. The challenges with this low tariff are colossal if we consider what the Malawian economy is losing. First, as estimated in the Constraints Analysis in 2010, the Malawi economy loses on average about 4% of its GDP, or over US\$215 million, per annum in lost revenue from businesses due to lack of power. This means that due to low export sophistication and lack of innovation, Malawi export jobs to other countries by consuming manufactured products that could have been easily produced locally. Second, there have been a number of studies that have looked at power investments needed in the country. The first was the 2010 IRP that was funded by the MCC Malawi compact which estimated a long-run marginal cost of US\$0.12 per kWh if Malawi were to follow a least cost option integrated plan. A similar estimate was compiled

in 2017 by a Cost of Service Study (CoSS) funded also by MCA-Malawi which estimated a bulk purchase long-run marginal cost of US\$0.0811 per kWh with retail prices estimated at US\$0.12 to US\$0.13 per kWh, again assuming Malawi follows a least cost option integrated resource planning methodology. As per the estimated electricity tariffs, ESCOM at the moment cannot even cover the bulk purchase average tariff that IPPs will demand when commissioning their generating plants. With such low electricity tariffs charged, ESCOM will not be able to even reduce the much anticipated blackouts that customers complain if no additional generation capacity is added to the grid.

Expensive alternative energy uses to Malawian people: Another misconception that MCA-Malawi has met throughout the compact implementation period is the anticipation from customers that electricity tariffs are expensive. However, if consumers were to compare the alternatives that they use and how much they pay per kWh consumed, they would realize that supporting a cost-reflective tariff to ensure that power supply is available, reliable and of good quality would be the best alternative towards reducing alternative energy costs and releasing such funds to other important uses. **Table 6** illustrates the per kWh cost on use of alternative energy sources in Malawi. As illustrated in **Table 6**, the main alternative energy sources for the Malawian people include solar energy, kerosene (or paraffin), fuelwood (or firewood), charcoal, diesel generators, petrol generators, and LPG gas. Before analyzing the costs of energy use, a few assumptions used are explained. For the main source of energy used by most consumers in Malawi include fuelwood and charcoal. For an average family of 5, a household spends on average MK800 per day for fuelwood and MK700 per day for charcoal.

Table 6: Estimated per kWh cost of Alternative Energy Sources in Malawi

Energy Item	Unit	Solar Energy	Electricity	Kerosene	Fuelwood	Charcoal	Diesel	LPG Gas	Petrol
Energy Content	MJ/unit	3.6	3.6	22.7	19.1	19.7	38.3	38.7	33.6
	KWh/MJ	1.0	1.0	6.3	5.3	5.5	10.6	10.8	9.3
Retail Price	MK	16,667	11,905	719	18,000	16,150	891	2,170	888
Consumption per month	kg, liter, kWh	291.86	202.44	2.47	173.84	32.30	1.00	1.00	1.00
Price/kg or kWh	MK/kg	57	59	292	104	500	891	2,170	888
Std Conversion Factor (Exchange Rate)	MK/US\$	735	735	735	735	735	735	735	735
Price/kg	US\$/kg	\$0.08	\$0.08	\$0.40	\$0.14	\$0.68	\$1.21	\$2.95	\$1.21
Price of Energy Delivered	MK/KWh	57.10	58.81	46.26	19.52	91.37	83.74	201.84	95.14
	US\$/KWh	\$0.08	\$0.08	\$0.06	\$0.03	\$0.12	\$0.11	\$0.27	\$0.13
Assumed Efficiency Price of Useful Energy	%	85%	100%	35%	15%	22%	60%	60%	60%
	MK/KWh	67.18	58.81	132.18	130.11	415.30	139.57	336.41	158.57
	US\$/KWh	\$0.09	\$0.08	\$0.18	\$0.18	\$0.57	\$0.19	\$0.46	\$0.22

As estimated in **Table 6**, it costs households between US\$0.04 per kWh of fuelwood and US\$0.08 per kWh of charcoal as the price of the energy delivered. However, the estimated price also take into account the waste left and not the actual energy content of the alternative energy source. Accounting for the energy efficiency of these alternatives which are 15% and 22%, this costs jump to US\$0.28 per kWh and US\$0.48 per kWh for fuelwood and charcoal, respectively. To put it different, out of 173 kg of fuelwood consumed by households in a month, only 26 kgs has useful energy: this is similar with charcoal where based on an estimate of 32.3 kgs of charcoal consumed

per household in a month, only 7 kgs has useful energy. Other alternatives such as diesel and petrol generators are far much expensive compared to the cost of electricity. As estimated in Table 94, such costs range from US\$0.35 – US\$0.45 per kWh of useful energy. LPG gas is currently estimated at US\$0.40 per kWh, while a 5 kVA solar system that uses batteries with a design life of 12 years has an estimated price of US\$0.15 per kWh. On the other hand, a cost-reflective tariff based on long-run marginal costs and assuming a least cost option approach is adopted could average between US\$0.12 and US\$0.15 per kWh. Just looking at the per kWh prices that households and businesses are experiencing in Malawi, improving the reliability of electricity in Malawi is thus paramount to addressing one of the goals of the Compact of reducing energy costs to households and businesses.

Social and Gender integration: In terms of cross-cutting issues, social and gender integration played a major row in sensitizing communities about their rights, health and safety, social and gender integration, and their welfare. Under the IDP interventions, there were seven activities that included Trafficking in Persons (TIP), child labour, community relations, gender-based violence and sexual harassment, workers’ rights, HIV and AIDS, and women economic empowerment. However, much as the Contractors complied with these compliance areas, there were two cases of child under-age defilement that were reported during the Compact implementation period: one in the North and the other in the Southern Region. The case in the Northern region even went through the Malawian court but the accused were acquitted based on circumstantial evidence provided by the Police. The other case in Blantyre is also in the hands of the courts pending judgement. One key lesson learned is that perhaps much as there were sensitizations conducted by contractors to their workers, community sensitization messages, especially that target girls, were not mainly the focus of the Compact. It is therefore important for future Compacts to ensure that messages or interventions targeting the girl child in project sites should be included as part of the contractor’s social and gender budgets.

4.6.2 Recommendations

In this section, a few recommendations are listed based on the implementation achieved.

- (1) The investments achieved in the Compact through the power sector revitalization project are seen to be catalysts to future growth and investments in the power sector. This means that for a successful utilization of the increased throughput capacity that has been increased from 260 MW to 960 MW, GOM needs to attract more generation capacity especially from IPPs. To use some of the independent assessments from consultants hired by MCA-Malawi, “*Lessons learned from countries seeking to attract foreign direct investment is that these have to demonstrate clearly to external investors that there is a clear, predictable and transparent process to invest in the power sector, that the process is in the hands of an independent, impartial and trustworthy regulator and that transaction costs can be reasonably foreseen and controlled. As such, it is recommended that both the public utilities and regulator board members’ experience, qualifications and independence should be scrutinized and confirmed before appointment, through a structured and transparent public process to ensure good governance and an effective use of public funds”.*
- (2) There are no “***half measures***” in the implementation of reforms. Of the recommendations that were made, only 40% were fully implemented and 30% were still in progress by Compact

end date; while the remaining 30% are yet to be implemented. Important reforms that are key to the success of the power sector in Malawi include the **creation of an independent, transparent, and trustworthy Single Buyer**, and **consistent implementation of a cost-reflective tariff** that will ensure that ESCOM as the off-taker is financially sound and creditworthy even to IPPs that are expected to do business with as well as reduce the cost. As ESCOM's sustainability plan emphasizes, *'In order to obtain optimum returns on the investments and installations under the Compact and facilitate developments of other integrating projects as outlined in [sic] the Strategic Planning priority domain, there is need for ESCOM to be financially stable. Lack of adequate funding will mean that most of the expansion projects will not be executed timely hence underutilizing the potential benefits of the Compact installations'*.

- (3) Since the major source of power generation in Malawi is the Shire River, continuance of ENRM and SGEF activities in the upper and middle Shire River will be crucial if Malawi is to mitigate the disruptive nature of weeds and sediments that greatly affect power generation at the three hydropower plants of Nkula, Tedzani and Kapichira. It is therefore recommended that the Shire BEST should continue to be supported after Compact end date to ensure that the ENRM and SGEF activities that were implemented during compact implementation period should be continued.