GOVERNMENT OF MALAWI

MONITORING AND EVALUATION PLAN

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1. PREAMBLE

This Monitoring and Evaluation (M&E) Plan:

- is part of the action plan set out in the MILLENNIUM CHALLENGE COMPACT (Compact) 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;
- to support provisions described in the Compact;
- being governed and following principles stipulated in the Policy for Monitoring and Evaluation of Compacts and Threshold Programs (MCC M&E Policy).

The M&E Plan is based on the Compact Amended Compact Agreement- Annex III signed on July 31, 2013, and follows the policies and guidance set forth in MCC Policy for Monitoring and Evaluation of Compact and Threshold programs dated May 12, 2012.

This M&E Plan is considered a binding document, and failure to comply with its stipulations could result in suspension of disbursements. It may be modified or amended as necessary following the MCC M&E Policy, and if it is consistent with the requirements of the Compact and any other relevant supplemental legal documents.

2. LIST OF ACRONYMS

AMP	Activity Monitoring Plans
CA	Constraint Analysis
CAPSCAN	Capacity Scan
CES	Central Electricity Supply
DoE	Department of Energy
Dx	Distribution
EIRR	Economic Internal Rate of Return
ESCOM	Electricity Supply Corporation of Malawi
GDP	Gross Domestic Product
GIS	Geographic Information System
GNI	Gross National Income
GoM	Government of Malawi
Gx	Generation
HPP	Hydro Power Plant
HRV	Hausmann, Rodrik and Velasco
IDP	Infrastructure Development Project
IHS	Integrated Household Survey
IRP	Integrated Resource Project
ITT	Indicator Tracking Table
kWh	Kilowatt hours
LV	Low Voltage
MCA-M	Millennium Challenge Account – Malawi
MCC	Millennium Challenge Corporation
MGDS	Malawi Growth and Development Strategy
MIS	Management Information System
MOE	Ministry of Energy
MV	Medium Voltage
MW	Megawatt
MWh	Megawatt hours
M&E	Monitoring and Evaluation
NES	Northern Electricity Supply
NCC	National Control Center
NPV	Net Present Value
PSRP	Power Sector Reform Project
QDRP	Quarterly Disbursement Reporting and Results Package
RERA	Regional Energy Regulatory Authority
SADC	Southern Africa Development Community
SAPD	South Africa Power Development
SAPP	Southern African Power Pool
SCADA	Supervisory Control and Data Acquisition
SES	Southern Electricity Supply
SGEF	Social and Gender Enhancement Fund
SGIP	Social and Gender Integration Plan
ToR	Terms of Reference
Tx	Transmission
US	United States
USD	United States Dollars

3. COMPACT AND OBJECTIVE OVERVIEW

3.1 Introduction

This Monitoring and Evaluation Plan serves as a guide for program implementation and management, so that MCA-M management staff, Steering Committee members, Executive Committee, Consultative Group members, program implementers, beneficiaries, and other stakeholders understand the progress being made toward the achievement of objectives and results, and are aware of variances between targets and actual achievement during implementation.

This Monitoring and Evaluation Plan is a management tool that provides the following functions:

- Gives details about what impacts the Compact and each of its components are expected to produce in economic, social, and gender areas and how these effects will be achieved.

- Explains in detail how the Millennium Challenge Account (MCA) and MCC will monitor and assess the Compact Program interventions to determine whether they are achieving their intended results and measure their larger impacts over time through rigorous evaluations.

- Establishes a process to alert implementers, stakeholders and MCC to any problems in program implementation and provides the basis for making any needed program adjustments.
- Outlines the flow of data and information from the project sites through to the various stakeholders both for public consumption and to inform decision-making. It sets the mechanisms that assure the quality, reliability and accuracy of program performance information and data.
- Outlines any M&E requirements that MCA-M must meet in order to receive disbursements.
- Provides programmatic information and data for evidence-based decision making concerning expansion of selected interventions meant to serve as a model, under the current Compact, for subsequent replication.

3.1.1 The Malawi Economy

Malawi is a landlocked country of approximately 14.8 million people that shares its borders with three countries: Mozambique in the south, south-west and south-east; Zambia in the north-west; and Tanzania in the north. Despite Malawi's strong growth in recent years, averaging 7.0 percent over the past 6 years, it ranks 205th out of 213 countries in terms of GNI per capita, at approximately US$ 880 (Purchasing Power Parity).[1] Malawi's economy in recent years has exhibited low rates of private sector investment, poor export performance, a high degree of concentration in a few agricultural products, and a falling share of manufacturing in GDP that has not kept pace even with its landlocked neighbors who share Malawi's degree of reliance on smallholder, rain-fed agriculture. The contribution of manufacturing to economic growth has been 0.5 percent, and this sector accounts for only 7.5 percent of GDP.[2]

Malawi's rural areas are characterized by a high population density and an unsustainable deterioration in natural resources. Food insecurity persists, and the economy remains heavily dependent upon rain-fed agriculture and basic commodity exports. Malawi's inability to escape from its relative

[1] World Bank, 2009
[2] See Malawi Constraints to Growth Analysis, 2009

deficiencies, to trade, and diversify its production leads to a high degree of vulnerability to domestic climatic shocks that disproportionately hurt the poor. Sustaining growth in manufacturing, services, and high value agriculture, promoting food security, and diversifying into non-traditional exports will require major improvements in the electricity and other infrastructure sectors.

3.1.2 Problem Analysis- the Impact of the Power Constraint on Malawi's Economy

MCC selected Malawi as eligible for Compact assistance in December 2007. In May 2008 the GOM initiated an analysis of the constraints to economic growth in Malawi in collaboration with the World Bank, the U.K. Department for International Development and the African Development Bank. The process of identifying constraints to economic growth in Malawi was based on a growth diagnostic study developed by Hausmann, Rodrik and Velasco (HRV) of the Kennedy School of Government from Harvard University. Using their methodology, the Malawi Constraints Analysis (CA) study (May, 2008) was developed and revealed that power, international corridors, human capital, water and irrigation, finance, an overvalued exchange rate, and administrative barriers to trade represent the binding constraints for economic growth.[3]

Through an extensive consultative process with key stakeholders utilizing the principles of Results-Focused Project Design,[4] the GoM developed and submitted concept papers to MCC in April 2009. The consultations took place from August 2008 to February 2009, and focused on identifying the main problems that contributed to the exacerbation of each constraint identified in the CA. Problem Trees were developed from which projects were later designed to revitalize the power sector through reforms that facilitate improved private sector participation, reduce production costs of energy intensive users, and increase the competitiveness of agricultural and manufactured products.

Water-based electricity generation serves a very crucial role in the Malawian economy and has contributed to agricultural and industrial development since independence in 1964. Over 90% of the electricity generated in the country is through hydro-power generation, mainly along the Shire River. There are four hydroelectric power stations along the Shire River that are operated by the Electricity Supply Corporation of Malawi (ESCOM). These include Nkula A and B (124.0 MW), Tedzani I, II, and III (91.6 MW), Kapichira I HPPs (64 MW) and II (64 MW) and Wovwe HPP (4.5 MW).

The Malawi economy holds one of the lowest generation capacities in the Southern Africa Development Community (SADC) region. In 2009, with an installed capacity of only 284.1 MW, an electrification rate of approximately 5.1 to 9 percent[5] (about 1 percent in rural areas), and per capita supply at approximately 90 kWh per year, Malawi's power sector falls behind many of its peers in Sub-Saharan Africa.[6]

The major concerns in the power sector have been the erratic flows of free water affecting electricity generation from hydropower plants (HPP), and a transmission system that is outdated and unable to transmit reliable power to its end users. These problems, the lack of adequate supply, and continued grid expansion have led to frequent load shedding and blackouts, which negatively impact electricity consumers in Malawi.

[3] The Constraints Analysis to Economic growth can be downloaded from the MCA-M website: www.mca-m.gov.mw
[4] Asian Development Bank, "Guidelines for Preparing a Design and Monitoring Framework", Project Performance Management System, Second Edition, July 2007
[5] The estimated 5.1% value is based on ESCOM connections, while 9% is based on total electrification.
[6] Malawi National Statistical Office, "Integrated Household Survey III", 2010. Data extrapolated to 2013.

Without significant investment in the sector, combined with improved price signals to help manage demand, power supply will remain inadequate to service existing customers, let alone new customers. Forced and unforced outages – already high – will increase over the next few years. The present situation creates a regressive tax on the Malawi economy, rewarding electricity consumers with electricity subsidized through general government revenues, and represents a loss in household and business productivity, higher cost of living and potentially reduced employment opportunities. Prospects for sustaining growth and diversifying production will remain poor, and delivery of health and education services will be adversely impacted.

3.1.3 Root Causes of Power Sector Constraint

The power sector's failures are at root the result of inadequate policies and sector governance. Malawi's parastatal electricity utility, Electricity Supply Corporation of Malawi (ESCOM), faces serious financial and operational challenges, having suffered from mismanagement, opportunism, poor governance, operational inefficiencies, low tariffs, and poor collections for years. No significant investments have been made since the construction and commissioning of Kapichira I hydro power plant in 2000. No major investments have been made to upgrade or expand the transmission system in recent years, and limited maintenance has been undertaken to keep the grid and power plants operational. Replacement and modernization of equipment have been delayed, while demand has increased, all of which has led to technical losses and poor reliability and quality of service. In addition, ESCOM has been overwhelmed in its attempts to mitigate the negative impacts of weed infestation and excessive sedimentation in the Shire River on downstream power plant operations. Due to the current demand and supply imbalance of about 50MW, load shedding is a daily occurrence.

Additionally, donor and private sector investment to address the issues highlighted above have been absent over the past decade largely due to uneven policy reform and enabling environment efforts, the lack of a credible, coherent expansion plan and high level political interference. The World Bank structured a loan for an Interconnector with Mozambique but until recently the investment faced problems obtaining approval by Parliament.

3.1.4 Power Sector Reform

While electricity sectors throughout Africa and the developing world are fraught with similar problems, there are examples within Sub-Saharan Africa of significant sector improvements through the adoption of sector and governance reforms. One study suggests that the reform measures to be promoted under MCC's Compact– in particular, to foster an independent and credible regulatory environment, appropriate governance and management of the utility, and sufficient tariff levels – would, to the extent adopted, lead to an approximate increase in generation capacity per capita of 20 percent, over a 10 year period.[7] Countries in Sub-Saharan Africa with more independent regulators and more independent and accountable utility governance tend to have better run electricity utilities and have in some cases seen a rapid expansion of electricity supply and access.[8] Therefore, reforms are not only related to the sustainability of investments in the sector, but to the overall impacts of the MCC program, and the degree to which the country can alleviate this key constraint to growth.

Despite Malawi's efforts to improve its power sector, flawed governance of ESCOM and the sector,

[7] See, for example, Stern and Cubbins 2006 (World Bank Economic Review) who attempt to present empirical evidence that de jure independent regulation causes an increase in installed generation capacity per capita in developing countries even when privatization is taken into account.

[8] Examples of countries with higher quality Board and sector governance arrangements similar to those MCC has recommended to Malawi include Ghana, Namibia, Tanzania, Rwanda, Nigeria, Botswana, and South Africa.

inadequate tariff and regulatory policies, and poor planning and oversight have impeded realization of the intended benefits of those efforts. According to policy adopted in the late 1990s ESCOM was reorganized in a traditional legal form for a commercial entity under Malawi's Companies Act. Further reforms followed with the passage of new Energy Laws in 2004, which were meant to establish an autonomous regulator and open the sector to private sector investment. While these measures were steps in the right direction, they were neither sufficiently comprehensive nor adequately implemented. In particular, the regulatory framework and Board governance arrangements for ESCOM, the failure to adopt cost recovery tariffs as provided by law, and competing GoM policy objectives have blurred accountability for the sector's problems. ESCOM suffers from multiple overlapping governmental oversights, which creates both inconsistent GoM directives that impede ESCOM in its attempts to operate in a commercial manner, and political interference and financial opportunism which hamper ESCOM's operational and financial performance. A lack of clear authority has obstructed adequate incentives and authority to turn the utility around. As a result, the country has not yet seen tangible benefit of the reforms undertaken, and if anything ESCOM's performance has deteriorated.

3.1.5 GOM Power Sector Strategy

The GoM recognizes the need to efficiently and effectively develop Malawi's energy system as vital for the development of its key growth sectors: agro-processing, mining, industrial and tourism. The goal of the GoM in the long-term is to continue developing and expanding electricity generation, transmission and distribution systems. In the medium- to long-term, the GoM will ensure continued development of power stations, promoting the use of renewable energy sources and enhancing urban and rural electrification (MGDS II, 2011-2016). The GoM has identified six key strategies in the energy sector that will be implemented in the medium-term. These include:

a). Developing additional power stations.
b). Promotion of renewable energy sources.
c). Improved management of energy generation, transmission and distribution systems.
d). Enhanced urban and rural electrification.
e). Promotion of public-private partnerships in energy generation and distribution.
f). Improved regulatory environment.

3.2 Program Logic

3.2.1 Compact Goal and Objectives

The Compact Goal is to reduce poverty through economic growth. Estimated to generate US$567.2 million worth of income benefits over 20 years,[9] the Compact Objective is 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. These goals and objectives will be realized through 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 hydropower generation, and create an enabling environment for private sector participation in the energy sector.

The Malawi Compact will be implemented through three projects:

[9] See the Malawi cost-benefit analysis, 2013.

(1) The **Infrastructure Development Project (IDP)** that seeks to improve 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)** that seeks to create 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** 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 Government of Malawi recognizes that good corporate governance of ESCOM and the development of an effective regulatory environment consistent with best practices in independent power utility regulation is important and will ensure that its investments in generation and grid capacity are not only affordable but also facilitate private sector participation in the expansion of energy access across Malawi.[10] The Malawi Compact also ensures that social and gender integration will be achieved in all three projects and that a Social and Gender Integration Plan (SGIP) will provide tools to support this integration and monitor progress.

3.2.2 Key Compact Outcomes

The Government of Malawi, with assistance from MCC, will implement 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 will be implemented throughout Malawi.

[10] According to the Integrated Household Survey of 2010/2011, currently only 9% of the total population and 1% of the rural population has access to electricity.

Figure 2 presents a summary of the Compact structure and objectives.

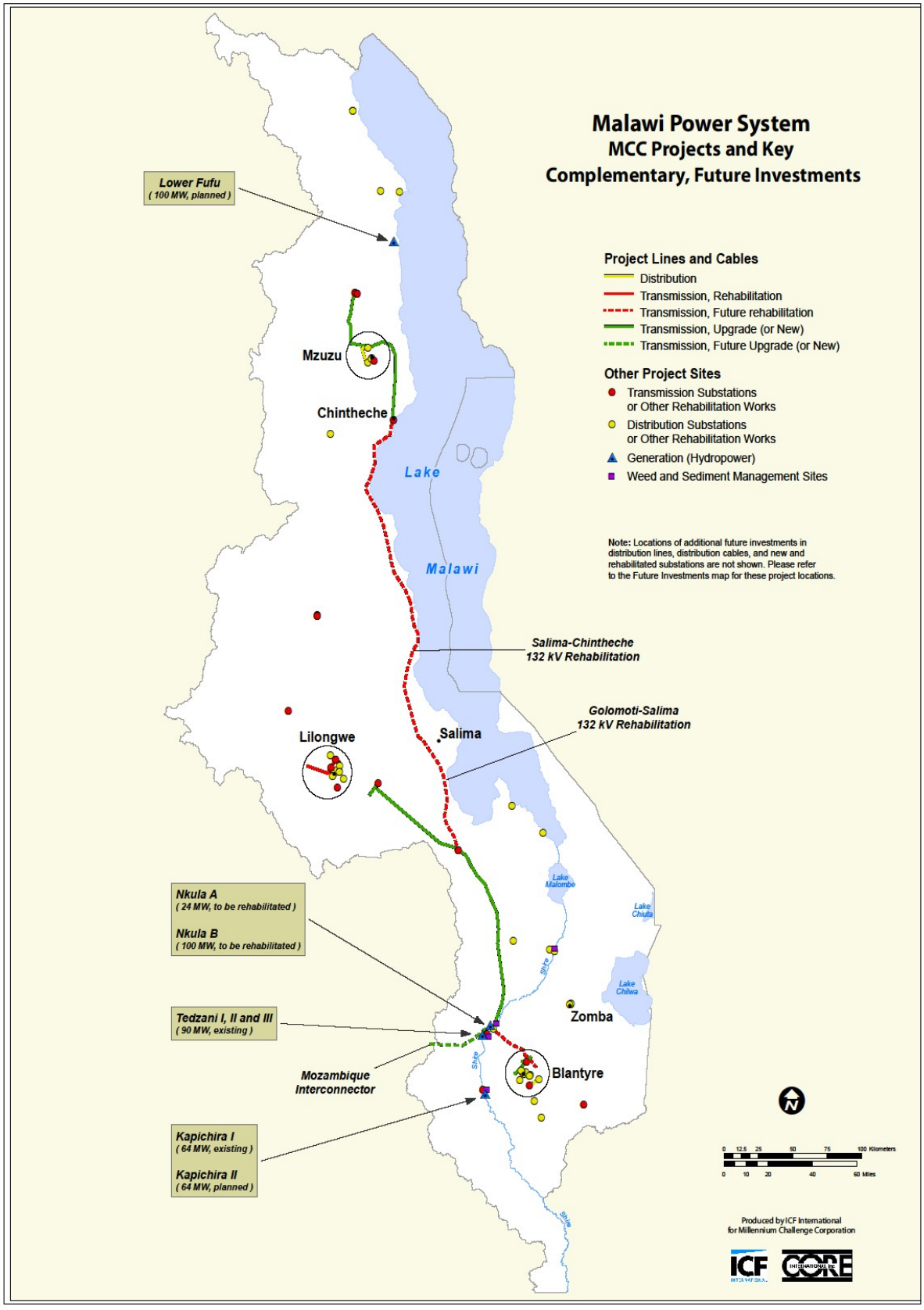


Figure 1: Malawi Compact Project Sites

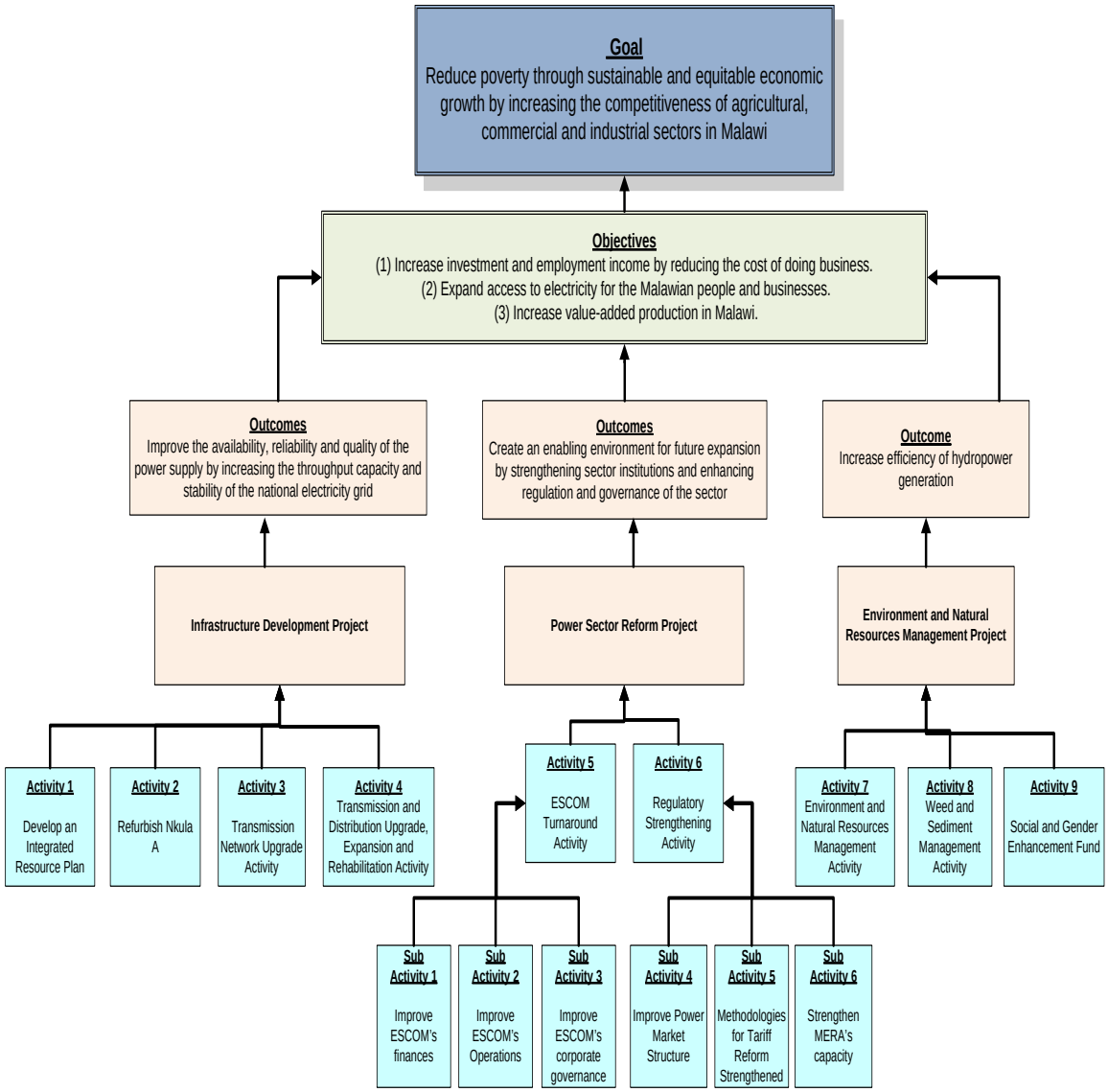


Figure 2: Compact Structure and Objectives

3.2.3 Project Overview

The following section provides a more detailed description of the individual Compact Projects and their associated activities. Detailed project logics for each of the Project Activities can be found in Annex IV.

3.2.3.1 Infrastructure Development Project (US$257.1 million)

The Infrastructure Development Project will rehabilitate, upgrade and modernize ESCOM's generation, transmission and distribution assets in 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. The activities include:

3.2.3.1.1 *Integrated Resource Plan Activity*

The objective of the IRP is to identify a prioritized list of generation resources that can help the Government and ESCOM meet the increasing demands for power in a manner that balances the objective of least or low cost power to users and diversification of energy sources, and to increase the impact of the Project.

3.2.3.1.2 *Nkula A Refurbishment Activity*

MCC Funding will support the refurbishment of the Nkula A hydropower plant, with the objective to improve the availability of power in Malawi by reducing outages caused by the condition of the assets, and maximizing power output from Nkula A. The refurbishment will improve the reliability of the plant, enhance its generation capacity, extend its useful life and thereby avoid a partial or total failure of the plant.

3.2.3.1.3 *Transmission Network Upgrade Activity*

This Activity is designed to upgrade the backbone of the transmission network by funding the following investments:

1) A 400 kV voltage power line from Phombeya to Lilongwe; and
2) A 132 kV voltage line parallel to the existing 66 kV and 33 kV lines from Chintheche to Luwinga and from Luwinga to Bwengu in the northern region.

3.2.3.1.4 *Transmission and Distribution Network Upgrade, Expansion and Rehabilitation Activity*

This Activity will take place in all of ESCOM's three regions (NES, CES, and SES), and will include:

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) Development of new substations;
5) Installation of improved protection systems;
6) Provision of network extensions and connections;
7) Installation of new controls and communication systems (SCADA).

The viability of the Infrastructure Development Project will be enhanced through other complementary investments that include new generation investments by Government such as construction and commissioning of Kapichira II hydropower station that adds 64 MW of installed generation capacity. The Kapichira II contract was awarded to China Gezhouba Group Company Limited and became effective on February 11, 2011. There has been significant progress made, and ESCOM plans to commission the power plant by December 2013 to add 64 MW to the grid.

3.2.3.2 Power Sector Reform Project (US$25.7 million)

The Power Sector Reform Project complements the Infrastructure Development Project by providing support for the Government's policy reform agenda and building capacity in pivotal sector institutions: ESCOM, the Malawi Energy Regulatory Authority or its successor ("MERA"), and the Ministry of Energy ("MoE"). The Power Sector Reform Project consists of two activities: the ESCOM Turnaround Activity and the Regulatory Strengthening Activity.

3.2.3.2.1 *ESCOM Turnaround Activity*

The objective of the activity is to restore ESCOM's financial health and rebuild ESCOM into a financially strong, well-managed company. Specifically, the activity includes the following sub-activities:

ESCOM Finances Sub-Activity:

a) Development of a detailed financial plan for 2013-2018;
b) Deployment of a financial turnaround team;
c) Development of a non-technical loss reduction strategy;
d) Assisting ESCOM in rapid billings and collections improvement;
e) Strengthening of ESCOM's internal controls;
f) Re-building of ESCOM's customer base;
g) Pursuit of debt collection;
h) Development of a new automated management information system;
i) Assistance with equitable tariff application to the regulator; and
j) Assistance with fixed asset mapping.

ESCOM's Corporate Governance Sub-Activity

k) Support recruitment services of key personnel;
a) Twinning/mentoring arrangements or management contract support;
b) Support a performance management system;
c) Support strategic planning by ESCOM's board of directors;
d) Provide technical assistance on corporate performance standards, including a study on best practices and benchmarks for corporate governance;
e) Support an annual performance audit of ESCOM operations;
f) Conduct a Social and Gender Institutional Audit;
g) Support the development of a Social and Gender Policy and Plan of Action;
h) Conduct gender training.

ESCOM's Operations Sub-Activity

i) Support change management efforts that include developing organizational design;
j) Conduct performance management reviews;
k) Design gender equitable human resources strategies;
l) Support the procurement division by strengthening internal control environment;
m) Develop policies and procedures to implement best practices in procurement;
n) Support other operational assistance including live wire repairs, asset management, occupational health and safety, safety and diagnostic equipment and critical spare parts;
o) Support the development of ESCOM's annual maintenance plan; and
p) Support ESCOM's adherence to the Public Procurement Act of Malawi and the policies and procedures of the Government's Office of the Director of Public Procurement.

3.2.3.2.2 *Regulatory Strengthening Activity*

The Regulatory Strengthening Activity complements 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, MERA and MoE. The objectives of the Regulatory Strengthening Activity are to develop a regulatory environment, consistent with best practices in independent power utility regulation, that support investment in generation and grid capacity at an affordable cost, with the potential participation of the private sector.

Tariff Reform Sub-Activity

Cost of Service Study: Support 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.

Policy, Legal and Regulatory Reform: Support the adoption of policy, legal and regulatory changes necessary to implement tariff reform that includes:

a) 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 licenses.

b) Improving the components and definitions for the tariff adjustment components, or the tariff indexation framework. This shall take into account the social objectives of promoting equitable access to low-income households.

MERA Capacity Building Sub-Activity

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.

Peer Reviews: Support the development of peer relationships with other regulatory bodies or

related organizations.

Benchmarking: Conduct Energy 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

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.

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.

Annual Performance Reporting: Support MERA in developing annual performance reports.

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

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

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.

Parliamentary Oversight: Work with Parliament to strengthen its role in oversight of the power sector**.**

3.2.3.3 Environmental and Natural Resource Management (ENRM) Project *(US$25.9 million)*

The objective of the ENRM Project is to help the Government and other relevant stakeholders address the growing problems of aquatic weed infestation and excessive sedimentation in the Shire River which cause costly disruptions to downstream power plant operations. The ENRM Activity is expected to improve land use and watershed management practices in the Shire River basin to help resolve underlying environmental and social issues that contribute to the aquatic weed and siltation affecting hydropower, communities, and other users dependent on ecosystem services downstream the Shire River.

The design of the ENRM Project draws upon the lessons learned and results from a Conservation Agriculture Impact Evaluation study co-financed by MCC with 609(g) funds, Malawi Ministry of Agriculture and Food Security (MOA), World Bank's ADP-Support Project (ADP-SP) and Yale University during Compact Development in order to learn from the MOA-WB's program.[11] The evaluation tested the most effective dissemination mechanism to maximize the knowledge of farmers about sustainable practices, their actual adoption of

[11] Conservation farming (pit planting) will be promoted in the dry districts of Balaka, Chikwawa, Neno and Rumphi, while and nutrient management focusing on Composting will be promoted in Dedza, Mchinji, Mzimba and Zomba.

these practices, and the resulting agricultural productivity.

3.2.3.3.1 *Weed and Silt Management Activity*

The ENRM Project will include mitigation techniques to reduce the impact of weeds and sedimentation by using mechanical measures at key generation sites or water flow management sites. This may include the following equipment (final equipment requirements shall be established pending a final assessment by the Consultant Engineer):

Liwonde Barrage

Purchase and use of additional harvester

Nkula Plant

Trash diversion barrier for Nkula head pond;
Rehabilitation of dredger for Nkula

Tedzani Plant

Trash diversion barrier for Tedzani head pond;
Purchase and use of dredger for Tedzani

Kapichira Plant

Trash diversion barrier for Kapichira head pond;
Purchase and use of dredger for Kapichira.

3.2.3.3.2 *ENRM Activity*

The ENRM Activity will include development and implementation of an integrated set of activities, acceptable to MCC, aimed at improving environmental and natural resources management (ENRM) in the Shire River Basin. These activities shall be based on analysis of the environmental, social (including gender) and economic factors that cause or contribute to weed infestation and sedimentation in the Shire River, and shall target the drivers of land-use degradation in the Shire River Basin. The Activity shall be implemented in collaboration with other donors and stakeholders.

3.2.3.3.3 Social and Gender Enhancement Fund Activity

The Compact will also finance a Social and Gender Enhancement Fund that will support improved land use management and natural resource-based economic development activities carried out by women and vulnerable groups in the Shire River Basin. Because women are often primary decision-makers in natural resource-based economic activities that in turn impact land use practices, the SGEF will support activities that directly or indirectly improve control and sustainable management of resources by women and vulnerable groups.

3.2.3.3.4 Social and Gender Integration

In order to maximize the positive social impacts of the Compact Program, the MCA-M shall implement activities that address key social and gender inequities, such as empowerment of vulnerable groups (women and children), human trafficking, child and forced labor, and HIV/AIDS. A Social and Gender Integration Plan (SGIP) will be developed which defines all

social and gender activities that will be integrated into the Compact projects, and shall identify key indicators to monitor progress of said activities. The SGIP shall provide MCC and MCA-M with an adequate tool to ensure that key social gender issues relating to the Compact interventions are adequately addressed throughout the implementation phase, and shall be consistent with MCC's Gender Policy and the Malawi National Gender Policy.

3.3 Projected Economic Benefits

The investments by MCC focus primarily on reforming the energy sector in Malawi, and putting the sector on a stable basis for future sustainable expansion and private sector investment. The reform is supported by refurbishing a portion of the capital stock of Malawi's electricity infrastructure. The majority of the proposed funds are targeted at transmission network upgrades, with smaller amounts targeting generation efficiency and power sector management. By reducing power outages and technical losses, enhancing the sustainability and efficiency of hydropower generation, and increasing the potential kilowatt hours ("kWh") of throughput to electricity consumers, the Compact Program is expected to reduce energy costs to enterprises and households, improve productivity in agriculture, manufacturing, and service sectors, and support the preservation and creation of employment opportunities in the economy.

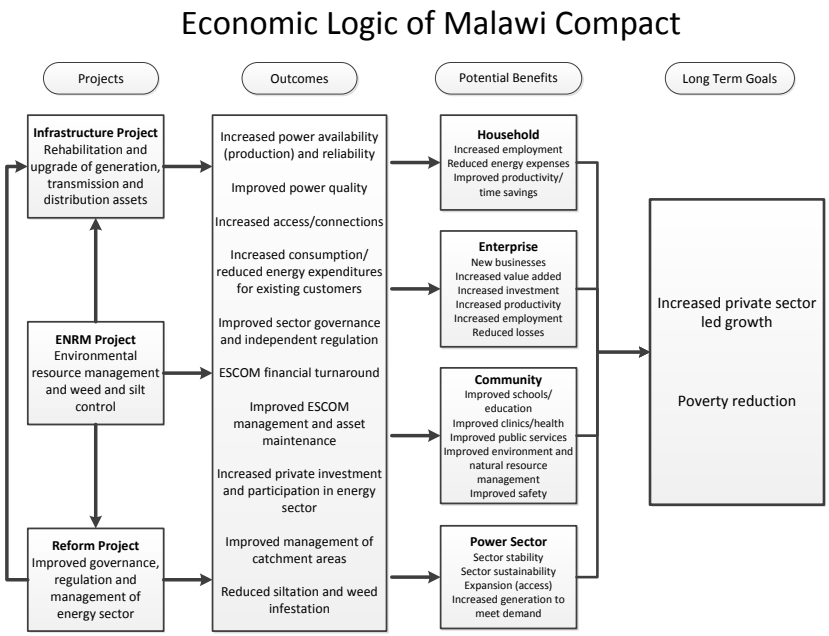


Figure 3: Economic Logic of Malawi Compact

3.3.1 Economic Cost-Benefit Analysis

MCC conducts economic analysis of investments to determine the economic rate of return (ERR) and thus assess projects based on the level of returns to both income and benefits. The economic analysis provides an estimate of the total increase in incomes attributable to a proposed MCC-funded activity relative to the total costs. The ERR reported in this section is calculated from a benefit-cost analysis describing how the Malawian people will benefit from MCC investments. Benefits are derived primarily from increases in grid-supplied, low-cost

electricity consumption.[12] The increases are measured in kWh and are valued according to the consumer's expected willingness-to-pay (WTP) for electricity (valued at the most likely alternative).

The benefit-cost analysis for the Compact captures benefits by starting with the generation sector, tracking generation through the transmission and distribution system, and measuring increased consumption by consumer group (industrial, commercial, and residential). The Generation section of the analysis indicates expected changes to generation resulting from the new 64 MW Kapichira II hydroelectric facility, increased availability due to weed and sediment management, and an additional 3 MW from the Nkula A refurbishment. The Transmission and Distribution section of the benefit-cost analysis indicates differences in technical losses between the project scenario and the baseline scenario. Finally, the Consumption section of the analysis apportions electricity consumption to three consumer groups: residential, commercial, and industrial. Benefits are calculated for each consumer group according to differences between WTP values and tariffs; total benefits are the sum of the three consumer group benefits. The WTP values for residential consumers represent the equivalent kWh cost of lighting produced from kerosene.[13] The commercial and industrial WTP values represent the costs of diesel self-generation, excluding capital costs.[14] The commercial and industrial WTP values are linked to the exchange rate and the world price of oil. The tariffs used in the analysis represent the expected cost-recovery tariffs that will be implemented by ESCOM, which are calculated based on present tariffs and consumption data, as well as data included in ESCOM's detailed financial model.

3.3.2 Economic Benefits

The expected net present value of benefits is US$567.2 million at a discount rate of 10 percent. The estimated economic rate of return is 18.7%.

	Original Economic Rate of Return (ERR)	Date Original Economic Rate of Return (ERR) Established	Current Economic Rate of Return (ERR)	Date Current Economic Rate of Return (ERR) Established
Power Sector Revitalization Program	48.1	12/01/2010	18.7	06/24/2013

Table 1: Economic Rate of Return

3.3.3 Other Related Compact Benefits

These estimated economic benefits and poverty reduction impacts do not include ancillary benefits. For instance, the Constraints Analysis suggests that various firms involved in agriculture, mining, and other productive sectors may experience increases in employment and/or wages, as well as productivity gains. Sector reform efforts targeted by the Compact are ultimately intended to lead to future investment and expansion of the power sector, including additional investments in generation. While these possible future investments have not been included in the CBA model, MCC believes that they are still plausible and they are therefore

[12] Increases in electricity consumption stem from: increased capacity from the Nkula A refurbishment, reduced losses in transmission lines, and project-related increases in transmitted electricity from Kapichira II (a GoM investment).
[13] The residential WTP value is not linked to the Malawi exchange rate or to the world price of oil.
[14] It is unreasonable to expect existing firms to sell existing backup generators, or to expect the provision of grid electricity to be of such a quality and availability that new firms would not purchase backup generators.

included in the program logic of the Compact. Therefore, evaluation approaches will focus on understanding the impact of the Program on the benefits not expressed in the CBA model in order to enhance MCC and the development community's learning and evidence base for energy investments.

3.4 Program Beneficiaries

According to the MCC "Guidelines for Economic and Beneficiary Analysis", beneficiaries of projects are considered individuals that are expected to experience better standards of living due to Compact activities aimed to increase their real incomes. The economic rate of return analysis for proposed projects gives details on benefit streams through which beneficiaries should experience increased income.

An estimated 982,729 individuals are expected to benefit from the MCC investments by year 20 as a result of increased consumption of electricity. The present value of the benefit stream per beneficiary is estimated to be US $577, with a corresponding estimated benefit-cost ratio (cost effectiveness) of 1.70.

	Estimated Number of Beneficiaries	Present Value (PV) of Benefits
Power Sector Revitalization Program	982,729	$567,200,000

Table 2: Projected Program Beneficiaries

The Malawi Compact is considered a broad-based program, as the benefits from electricity generation and transmission span multiple regions in Malawi. The Compact is not considered a national-level program, as the model only projects benefits to those connected to the national grid. The magnitude of the benefits these consumers experience are a function of the increased supply of electricity and the consumers' WTP; increases in the number of consumers (i.e. increased connections to the national grid) are also included as beneficiaries.

3.4.1 Poverty Scorecard

Table 3 presents a poverty scorecard for the Malawi Compact.

MCC Cost (Millions USD)	$350.7				
20-Year ERR	18.7%				
Present Value (PV) of All Costs (Millions USD)	$333.2				
Present Value (PV) of Benefit Stream (Millions USD)	$567.2				
		Consumption per day (2013 PPP $)			
Beneficiaries	Total	< $1.25	< $2[15]	$2-$4	> $4
Beneficiary Households in Year 20 (#)	266,409				
Beneficiary Individuals in Year 20 (#)	982,729				
National Population in Year 20[16] (#)	26,103,274				
Beneficiary Population by Poverty Level[17] (%)		4%	9%	23%	68%
National Population by Poverty Level[13] (%)		28 %	54%	30%	15%
The Magnitude of the Benefits[18]					
PV of Benefit Stream Per Beneficiary (PPP US$)	$577	$6	$75	$202	$773
PV of Benefit Stream as Share of Annual Consumption (%)	24%	2%	16%	20%	25%
Cost Effectiveness					
PV of Benefit Stream/PV of All Costs	1.70				
PV of Benefit Stream/MCC Costs	1.62	0.07	0.15	0.37	1.10
Percent of Project Participants Who Are Female[19]	51%				
Average Annual Consumption of Beneficiaries (PPP US$)	$2,388				
National Average Income per capita[13] (PPP US$)	$1,186				
National Population (2013)	14,793,668				

Table 3: Poverty Scorecard

Those living on less than US$1.25 a day are expected to gain approximately US$6 per beneficiary over a 20-year period, adjusted for purchasing power parity (PPP), while those living below US$2.00 a day will gain an average of US$75 per beneficiary over a 20-year period. Those in the middle income category (US$2-4 per day) are expected to gain approximately US$202 per beneficiary while those living on more than US$4.00 a day are expected to gain US$773 per beneficiary.

3.4.2 Key Assumptions and Risks

Key assumptions and risks that are external to the compact have been documented in Table 4 at each level of the Compact logical framework. MCA-M will keep track of all assumptions and risks throughout the compact implementation period.

[15] The beneficiaries and population living on less than $2 per day include those under $1.25 per day
[16] Based on 2013 population (IMF-WEO), projected to Year 20, using the average growth rate between 2009-2013
[17] Based on MCC calculations using the Malawi 2010-2011 IHS3 Survey
[18] The total benefit stream (individuals and firms) is split according to Beneficiary Poverty levels.
[19] From IHS3 Household Characteristics Report, based on 2011 data

Outcome–level Assumptions and Risks	
Compact Program Design Summary	**Assumptions and Risks**
LONG-TERM GOAL Reduce poverty through economic growth by increasing the competitiveness of agricultural, commercial and industrial sectors in Malawi	Assumptions • Malawi economy continues to grow at 5-7% p.a. in real GDP • Foreign Exchange and finance available for business • Growth in demand for Malawian goods • Labor pool matches market needs Risks • Macroeconomic and fiscal instability • Deterioration of investment climate • Food insecurity • Political instability
MEDIUM-TERM OUTCOMES[20] 1. Increase investment and employment income by reducing the cost of doing business. 2. Expand access to electricity for the Malawian people and businesses. 3. Increase value-added production in Malawi.	Assumptions • Use of power for enterprise development. • Sufficient demand for electricity services in north through mining industry. • Power quality and reliability improves enough that customers reduce generator use and use of charcoal and fuel wood. • Foreign Exchange and finance available for business. • Critical inputs for production available. • Availability and affordability of electrical appliances. • Government continues to invest in generation capacity. Risks • Demand outstrips supply of power.
SHORT-TERM OUTCOME[21] (accomplished by year 5 of Compact) 1. Power Sector Reform Project 1.1 Improved Internal and External Governance of the Power Sector. 1.2 Improved Financial Sustainability / Solvency of ESCOM. 2. Infrastructure Development Project 2.1 Improved availability, reliability and quality of supply 2.2 Increased throughput capacity and stability of national electricity grid. 3. ENRM Project 3.1 Better informed action taken by leaders to resolve land allocation/conflicts in an equitable way. 3.2 Adult functional numeracy and literacy is improved. 3.3 Women have acquired the skills to play a greater role/more active role in the village committees and their communities as a whole. 3.4 Economic empowerment of women through business	Assumptions • New IPP generation and Kapichira II installed. • Availability of ESCOM staff and materials and effective procurement processes. • Connection/ wiring fees affordable for customers. • Availability of maintenance spares from ESCOM. • Power quality and reliability improves and customers reduce generator, charcoal and fuel wood use • Demand-side measures improve load profiles • Cogeneration opportunities explored. • Shortfall in asset rehabilitation is funded by other donors, GOM and cash generated from ESCOM operations. Risks • Malawi's MCC score card deteriorates • ESCOM tariff level does not enable cost recovery while allowing subsidies for poor • Insufficient ESCOM budget /cash flow for O&M and capital investment.

[20] **Compact Objective –** Compact objectives are outlined in the Compact Agreement and are measured with outcome indicators. Compact activities, outputs and outcomes are all necessary to in order to achieve the Compact Objectives; however they are not sufficient in and of themselves. Attribution of results at the Objective and Goal levels are only possible through counterfactual based impact evaluations.

[21] **Outcome –** Compact activities produce outputs that collectively are both necessary and sufficient to achieve the compact outcomes within the 5 year timeframe.

Outcome–level Assumptions and Risks	
skills, marketing and/or other approaches.	• Parliament does not approve necessary reforms • MAREP extensions increase system instability. • Vandalism of steel members, transformers and equipment. • Supply of electricity likely to remain below national demand for years. • Climate change alters environmental patterns for hydro • Liwonde barrage breaks down. • Greenbelt initiative increases siltation/ weeds and / or reduced water for Generation. • Water conflicts – ESCOM, Water Board, Illovo or Trans-boundary. • Political interference in ESCOM operations

Table 4: Outcome Level Assumptions and Risks

Output-level Assumptions and Risks	
Compact Program Design Summary	Assumptions and Risks
OUTPUTS[22] 1. Power Sector Reform Project 1.1 Turnaround Facility (TAF) 1.2 ESCOM CEO Recruitment 1.3 Detailed Financial Modeling and Planning 1.4 Revenue Diagnostic & Financial Turnaround (RFT) 1.5 MIS & Billing System 1.6 Cost of Service Analysis / Tariff Advisor 1.7 Technical Loss Reduction Study 1.8 Power Market Structure Design 1.9 Power Market Structure Implementation 1.10 ESCOM Board Governance & Training 1.11 Regulatory & Governance Benchmarking 1.12 Regulatory & Institutional Capacity Building 1.13 Public & Parliament Outreach 1.14 TA for ESCOM Operational Improvements, Change Management 1.15 Improved Internal and External Governance of the Power Sector. 2. Infrastructure Development Project 2.1 Consulting Engineer/Construction Supervision 2.2 RAPs Preparation and Implementation 2.3 Nkula A Refurbishment Activity 2.4 Transmission Network Upgrade 2.5 Distribution sub projects - SS, OHL, SCADA" 3. ENRM Project 3.1 Weed and Sediment Management 3.2 Environment and Natural Resources Management Action Plan 3.3 Social And Gender Enhancement Fund Activity	Assumptions • Cost certainty for physical works • ODPP oversight: procurements successful and on-time • Project related resettlement is manageable • ESCOM investments in pre-paid meters • ESCOM achieves an optimal personnel level by implementing the results of the on-going right-sizing study within 2 years of completion of study. Risks • Political will to implement reforms; parliament approves reforms • Technical staff turnover and availability within ESCOM and MCA • Cost overruns, input price changes and exchange rate movements • Resettlement causes delays • Vandalism of steel members and transformers • Quality of contractor performance, construction materials and workmanship • Malawi's MCC score card deteriorates • Government unable to honor its commitments to provide projected working capital needs to ESCOM • ESCOM unable to meet agreed semi-annual review targets

Table 5: Output Level Assumptions and Risks

[22] **Outputs –** Compact outputs are project deliverables produced by Compact-financed activities, i.e., new or rehabilitated infrastructure, a change in service, behavior or policy.

4. MONITORING COMPONENT

4.1 Summary of Monitoring Strategy

The Compact will be monitored systematically and progress reported regularly through the indicator tracking table (ITT). There are four levels of indicators that follow from the program logic framework: (i) impact (goal), (ii) outcome, (iii) output and (iv) process. The various indicator levels map to the logical framework and thus allow Project developers and managers to understand to what extent planned activities are achieving their intended objectives. Monitoring data will be analyzed regularly to allow managers of MCA-M and MCC to make programmatic adjustments as necessary with a view towards improving the overall implementation and results of the Program.

The M&E plan is framed and constructed using the program logic framework approach that classifies indicators as process milestones, output, outcome, and impact (goal indicators).

- **Goal** indicators monitor progress on Compact goals and help determine if MCA-M and MCC are meeting their founding principle of poverty reduction through economic growth.
- **Outcome** indicators measure intermediate or medium-term effects of an intervention, including the Compact Objectives.
- **Output** indicators measure the direct result of the project activities—most commonly these are goods or services produced by the implementation of an activity.
- **Process Milestones** record an event or a sign of progress toward the completion of project activities. They are a precursor to the achievement of Project Outputs and a way to ensure the work plan is proceeding on time to sufficiently guarantee that outcomes will be met as projected.[23]

The Indicator Definition Table provides relevant details for each indicator by Project and can be found in Annex I. It provides descriptions for the indicator structure by specifying each indicator's: (i) title; (ii) definition; (iii) unit of measurement; (iv) data source; (v) method of collection; (vi) the frequency of collection; and (vii) party or parties responsible.

To ensure that the Program is on track to meet its overall goals and objectives, the monitoring indicators will be measured against established baselines and targets, derived from ex-ante economic rate of return analysis, other types of analysis, and project planning documents. The targets reflect the underlying assumptions made in program design about what each activity would likely achieve. Baselines and target levels for each indicator are defined in Annex II.

Indicators may need to be modified in future versions of the M&E Plan. Annex III of the Compact outlines the goal and outcome-level indicators. The M&E Plan builds on this information with output and process indicators developed by MCA-M project managers and implementers in the early stage of project implementation. The M&E Unit shall consult and assist in setting up each implementer's monitoring plan.

[23] The indicator levels are formally defined in MCC's *Policy for Monitoring and Evaluation of Compacts and Threshold Programs.*

Modification and revisions to the indicators may only be made according to the MCC M&E Policy.

This M&E Plan provides a succinct description of each indicator in the Indicator Documentation Table, Annex III. The definition of the Outcome indicator was developed by the M&E Units of MCC and MCA-M in close coordination and is derived from Compact documents, the economic analysis, the baseline survey, participatory exercises with stakeholders' participation, from national strategies and sector papers including the National Development Strategy, and statistics published by the National Statistical Office. The definitions for Output and Process indicators are derived from Compact documents, Implementing Entities and implementers' work plans, and MCC external reporting requirements.

A number of each Project's indicators, baselines and targets are currently pending, particularly for lower level output and process indicators. The majority of these baselines and targets will be established within the first year of the Compact once the final detailed design are known, and once implementation contracts are awarded and contractors have presented their work plans.

4.1.1 Indicator Overview

4.1.1.1 Goal Indicators – Long Term

The Malawi Compact is expected to contribute to the attainment of the Malawi Growth and Development Strategy (MGDS) goal of promoting economic growth and poverty reduction, specifically through increased competitiveness of agricultural, commercial and industrial sectors. By 2016, the MGDS aim to maintain annual real GDP growth at 6% and reduce the national poverty rate from 40% (2010) to 35-37% (2016).

The Compact will *contribute* to the attainment of these goals through strategic investments in power quality, availability and reliability and creating an enabling environment for business development. This is expected to lead to a diversification of the Malawi economy, evidenced by an increase in the percentage of GDP attributable to value-added enterprise in manufacturing and industry.[24] As of fiscal year 2013, the contribution of manufacturing sector to GDP was 9.0% based on 2009 constant prices.

The MCA-M M&E Team will track poverty and economic variables (gender disaggregated to the extent feasible) to provide contextual information for interpreting the Compact's results.

4.1.1.2 Medium and Long-Term Outcome Indicators

Medium and long-term outcome indicators will be used to measure Compact objectives, with their definitions, unit of measurement, baseline, and annual targets specified in Annexes I and II. The Project is expected to contribute to the achievement of the medium-term outcome Indicators and Targets, but is not solely responsible for the results.

[24] This result is not being modeled in the cost benefit analysis. However, the findings of the Constraints Analysis suggest that improvements in power quality and reliability may lead to expansion in these sectors, which is a crucial component of Malawi's growth strategy.

4.1.1.3 Short-Term Outcome, Output and Process Indicators

Short-term outcome indicators are designed to measure results at the project level, with their definitions, unit of measurement, baseline, and annual targets specified in Annexes I and II.

4.1.2 Infrastructure Development Project Indicators

Specifically, the Infrastructure Development Project will rehabilitate, upgrade and modernize ESCOM's generation, transmission and distribution assets in most urgent need of repair or upgrading with the aim of preserving the existing generation and improving the capability of the transmission and distribution system. The overall assumptions used to estimate Year 5 results include the assumption that the Government of Malawi will commission Kapichira II by Year 1. Key indicators with their definitions, unit of measurement, baseline, and annual targets specified in Annexes I and II.

4.1.3 Power Sector Reform Project Indicators

The Power Sector Reform Project will complement the infrastructure development project by supporting the Government's policy reform agenda and capacity building in pivotal sector institutions such as the Ministry of Natural Resources, Energy and Environment (the "***MOE***"), Malawi Energy Regulatory Authority (the "***Authority*"** or "***MERA***") and the Electricity Supply Corporation of Malawi ("***ESCOM***").

Specifically, the activities include: (i) ESCOM's turnaround that aims to restore ESCOM's financial health and rebuild the organization into a strong, well-managed company; and (ii) regulatory strengthening that aims to develop a regulatory environment that is consistent with best practices in independent power utility regulation. Key indicators with their definitions, unit of measurement, baseline, and annual targets specified in Annexes I and II.

4.1.4 Indicators Linked to Semi Annual Review (SAR) Process

Under the Power Sector Reform Agenda, MCA-M and MCC have agreed that certain indicators are critical to progress on the reform agenda, and corrective action, acceptable to MCC as needed to ensure satisfactory progress, will be a condition of continued MCC funding. These specific indicators will be jointly supervised by the two parties in strategic areas: ESCOM finances; ESCOM operations; ESCOM corporate governance; tariff reform; MERA governance; and regulatory enabling environment for public and private sector participation. Key indicators with their definitions, unit of measurement, baseline, and annual targets specified in Annexes I and II.

4.1.5 Environment and Natural Resources Management Project Indicators

Specifically, the objective of the ENRM Project is to help the Government and other relevant stakeholders address the growing problems of aquatic weed infestation and excessive sedimentation in the Shire River which cause costly disruptions to downstream power plant operations. Key indicators with their definitions, unit of measurement, baseline, and annual targets specified in Annexes I and II. The SGEF activity indicators will be developed and included in the first amendment to the M&E plan.

4.1.6 Data Disaggregation

The Malawi Compact with MCC estimates the number of individuals that would benefit from MCC investments in the power sector. Data shall be disaggregated, as feasible and cost-effective, based on gender (individuals), age, region, and income. Final disaggregations will be determined in collaboration with the Independent Evaluator of the Compact program and based on the evaluation strategy and questions for the Compact. Annex 6 identifies indicator disaggregation. Select disaggregated figures identified in Annex 6 will be reported to MCC in the quarterly Indicator Tracking Table (see Annex I and I).

Data disaggregation for power infrastructure investments at outcome level is challenging because one can only disaggregate some of the indicators by customer type and region and not by gender. A typical example of customer category can be found on the Project Partner's website: http://www.escommw.com/tariffs.php.

The Compact M&E program will, however, devise strategies to understand the impact of electricity and of reform on men and women and other disadvantaged groups through its evaluation work. Where feasible, the evaluations will identify additional indicators to be disaggregated by sex, age and/or income and methodologies to assess the impact of the project on women, children and other vulnerable groups.

4.1.7 Data Sources

The indicators identified in the M&E Plan will require the collection of a vast quantity of both primary and secondary data from various sources within Malawi such as the Government of Malawi statistics, National Statistics Office and external data sources such as the World Bank, International Monetary Fund and OECD. To the greatest extent possible, MCA-M will attempt to harmonize data collection with other existing planned surveys and ensure that the data collected through the project are useful and cost effective.

In scenarios where economic and financial analysis will be conducted to quantify the benefits of the projects, data requirements to recalibrate the '*with and without*' project scenario will be required to recalculate the intended outcomes and impacts as projected in the original ERR calculations.

The MCA-M M&E Team will frequently collect administrative data from all implementing partners used to document progress on both activities and outputs, and process indicators including inputs used. Key administrative data to be sourced from the key Project Partner (ESCOM) include generation statistics, distribution statistics, management accounts, sales statistics, SCADA excel files, ENRM statistics, and progress reports. Other data files will be sourced from institutions such as MERA and the Ministry of Energy.

4.2 Data Quality Reviews (DQRs)

Data Quality Reviews will be conducted in accordance with the requirements of the MCC M&E Policy. The objectives of DQRs are to assess the extent to which data meets the standards defined in the MCC M&E Policy in the areas of validity, reliability, timeliness, precision and integrity. Data quality reviews will be used to verify the consistency and quality of data over time across implementing agencies and other reporting institutions. DQRs will also serve to

identify where the highest levels of data quality is not possible, given the realities of data collection. DQRs will help ensure that.

The particular objectives for the data quality reviews will be identification of the following parameters: i) what proportion of the data has quality problems (completeness, conformity, consistency, accuracy, duplication, integrity); ii) which of the records in the dataset are of unacceptably low quality; iii) what are the most predominant data quality problems within each field.

MCA-M will contract an independent data quality reviewer in compliance with MCC Program Procurement Guidelines. The entity responsible for data quality reviews should be hired in Year 1 of the Compact. The M&E Officer and other Officers, as appropriate, within MCA-M and the implementing entities should also regularly check data quality. In doing so, MCA-M may hire individual data quality monitors to monitor data collection and quality, as needed. Besides independent DQRs, the MCA-M M&E Unit will also conduct field visits on a regular basis or whenever requested by MCC, to review the quality of the data gathered through this M&E Plan. This exercise will be done in coordination with the respective project stakeholders.

4.2.1 M&E Capacity Program

MCA-M will be responsible for ensuring regular training of key project stakeholders in monitoring and evaluation in order to build the capacity of these stakeholders to remain compliant with the M&E requirements of the compact. The capacity building program will be needs based, as determined through a) data quality reviews, b) information collected from the MCA-M ITT monitoring pilot that took place from October 2009 to June 2010, and c) as identified in the findings of the Capacity Scan Assessment (CAPSCAN Report) finalized in March 2010, which revealed the need for more robust data and M&E in the energy sector and recommended that more resources should be allocated to this function across the sector.

4.3 Standard Reporting Requirements

4.3.1 Quarterly Disbursement Request and Reporting Package

Performance reports serve as a vehicle by which the MCA Management informs MCC of implementation progress and on-going field revisions to Project work plans. Currently, MCC requires that MCA-M submit a Quarterly Disbursement Request Package (QDRP) each quarter. The QDRP must contain an updated **Indicator Tracking Table** (ITT) and a **narrative** report. A complete ITT presents the preceding quarters' indicator actuals and current quarter indicator projections against targets set forth in this M&E Plan. The QDRP narrative report provides a brief description of the previous quarter's compact implementation progress and explains how requested funds will be used in the coming quarter. The QDRP narrative is the responsibility of all staff of the MCA. The narrative report, which is not a public document and is limited to five pages, includes the following:

- Status of implementation of activities planned during the previous quarter for each component of the program and provide explanations in case there are deviations from the plans,
- Challenges that might affect implementation and propose measures to address the challenges,

- Significant M&E activities that took place during the quarter such as data collection, M&E Procurements and results of any M&E studies.
- Analysis of data and information from the ITT, accompanied by either graphical displays or pictures to substantiate progress made.

The QDRP narrative is to be consolidated by the M&E directorate for review and approval by MCA Project Directorates and management. The QDRP narrative is then submitted to MCC management for review and approval. Additional guidance on reporting is contained in MCC's *Guidance on Quarterly MCA Disbursement Request and Reporting Package*.

4.3.2 Annual Performance Reviews

MCA-M may choose to conduct Annual Performance Reviews and submit an Annual Supplemental Report to regular quarterly reporting. The Annual Supplemental Report may provide information on accomplishments and developments of Compact implementation related to progress on Activities, the consultative process, donor coordination and lessons learned and best practices. Though not an MCC requirement, the Annual Supplemental Report may be submitted to MCC one month after the end of each US fiscal year (October 30).

These annual performance reviews may include workshops. A workshop would be moderated by competent facilitator(s). Participants of the workshop would include representatives from a wide range of stakeholders. The workshops would provide opportunities for:

- Reviewing the overall implementation progress of MCA-M;
- Analyzing problems encountered in the course of implementation and discuss possible actions;
- Reviewing the projects and proposing modifications as necessary; and
- Using the findings for planning activities for the subsequent year.

MCA-M shall conduct Annual Performance Reviews based on MCA-M implementation
The first draft of the Annual Performance Report shall be submitted four (4) weeks after the end of MCC fiscal year (October 30). The fifth (5^{th}) week shall be used to incorporate all comments from relevant stakeholders. The final Annual Performance Report shall be submitted to MCC, GoM and MCA-M Board six (6) weeks after the end of MCC fiscal year (November 15). The five Annual Performance Reports that shall be compiled shall be used to consolidate MCA-M Compact Completion Report at the end of the five (5) year term of the Compact period.

4.3.3 Semi-Annual Reviews of Progress on Reforms

As required per Annex I of the Compact Agreement, the Compact M&E framework will provide regular information on the quality of service; electricity supply; electricity access and financial performance in the sector (see semi-annual review indicators in Tables above). The analytic report shall be completed semi-annually and shall be complemented by two benchmarking studies that will assess the quality of reform and governance in the electricity sector by comparing Malawi to its regional peers and international benchmarks and best practices.

4.3.4 Compact Closeout

Upon completion of each Compact program, MCC will comprehensively assess three fundamental questions:

1. Did the program meet its objectives;
2. Why did the Compact program meet or not meet these objectives; and
3. What lessons can be learned from the implementation experience (both procedural and substantive).

MCA-M staff will draft the Compact Completion Report (CCR) in the last year of compact implementation to evaluate these fundamental questions and other aspects of Compact program performance. After MCA-M staff will draft the CCR, MCC staff then draft the Post-Completion Assessment Report (PCAR) within 6 months after the compact ends to evaluate these same fundamental questions and other aspects of Compact program performance.

4.3.5 M&E Post-Compact

In conjunction with the Program Closure Plan, MCC and MCA will develop a post-Compact monitoring and evaluation plan designed to observe the persistence of benefits created under the Compact. The plan will describe future monitoring and evaluation activities, identify the individuals and organizations that would undertake these activities, and identify resources for future monitoring and evaluation from MCC and GOM. It is expected that the Malawian Ministry of Economic Development and Planning, the Ministry of Energy and ESCOM will be involved in post-compact M&E activities.

5. EVALUATION COMPONENT

5.1 Summary of Evaluation Strategy

Evaluations assess as systematically and objectively as possible the Program's rationale, relevance, effectiveness, efficiency, merits, sustainability and impact. The evaluations will strive to estimate the impacts on the targeted beneficiaries and wider regional or national economy. The evaluations will provide MCC, MCA-M and other stakeholders with information during the Compact on whether or not the intended outcomes are likely to be achieved and at the Compact's end on the impacts that are attributable to the Program.

The evaluation strategy will be based upon scientific models that ensure the advantages of neutrality, accuracy, objectivity and the validity of the information. These models will comprise experimental and quasi-experimental designs as well as statistical modelling. Methodologies will be selected considering cost-effectiveness. Particularly important are effects on household-level and intra-household material well-being, measured in terms of consumption or income, and firms' net income.

The evaluations shall also include a comparison of the total costs devoted to the Compact and the gains in local incomes attributable to the Compact, generating an ERR. When the changes in local incomes are not directly observed or the changes observed are not entirely attributable to the program (as in the case of pre-post designs), the evaluations should model these using the changes observed in other projects coupled with reasonable assumptions and evidence from other contexts.

More than formal documentation of Program results, evaluation will serve as a learning tool during Compact implementation and beyond. MCC will strive to conduct evaluations in a participatory way to ensure their success and relevance while protecting the evaluations' objectivity. The participatory approach will also include continuous training for Program staff and stakeholders on evaluation methods. Participatory, qualitative evaluation will provide an opportunity to better understand stakeholders' perceptions of the results, engage a broad cross-section of stakeholders including by gender, and enhance ownership of the outcome of the development process.

5.1.1 Evaluation Types

Every Project in a Compact must undergo a comprehensive, independent evaluation after completion or termination. Final evaluations support two objectives derived from MCC's core principles: accountability and learning. Accountability refers to MCC and MCA-M's obligations to report on their activities and attributable outcomes, accept responsibility for these outcomes, and disclose the findings in a public and transparent manner. Learning refers to improving the understanding of the causal relationships between interventions and changes in poverty and incomes.

To ensure evaluations are of high quality and independent, MCC will directly contract independent evaluators to help design the methodology, data collection instruments and analysis for either an impact evaluation or performance evaluation.

- ***Performance Evaluation*** – is a study that starts with descriptive questions, such as: what were the objectives of a particular project or program, what the project or program has

achieved; how it has been implemented; how it is perceived and valued; whether expected results are occurring and are sustainable; and other questions that are pertinent to program design, management and operational decision making. MCC's performance evaluations also address questions of program impact and cost-effectiveness.

- ***Impact Evaluation*** – is a study that measures the changes in income and/or other aspects of well-being that are attributable to a defined intervention. Impact evaluations require a credible and rigorously defined counterfactual, which estimates what would have happened to the beneficiaries absent the project. Estimated impacts, when contrasted with total related costs, provide an assessment of the intervention's cost-effectiveness.

MCC and MCA shall balance the expected accountability and learning benefits with the evaluation costs to determine what type of evaluation approach is appropriate. Impact evaluations are performed when their costs are warranted by the expected accountability and learning. MCC and MCA-M will consult with GoM, civil society and other donor agencies to identify research questions and to assist in the prioritization of the projects and/or activities to be evaluated.

5.1.2 MCC Impact Evaluations

One of the key features of MCC's approach to development assistance is its strong commitment to conducting rigorous impact evaluations to find out more largely whether the Compact had the desired effects on individuals, households, and institutions and whether those effects are attributable to the program intervention. Impact evaluations will also explore the distribution effect or the extent to which project benefits reach the poor and the impact that these benefits have on their welfare. Impact evaluations will employ, whenever possible, methodologies that determine whether results can be reliably attributed to MCC funded interventions through a control group or 'counterfactual'.

To ensure impact evaluations are of a high quality, MCC directly procures and funds the impact evaluation teams, while MCA-M conducts the data collection process.

5.1.3 Mid-term Evaluation

MCA-M, with the prior written approval from MCC, will engage an independent evaluator to conduct a process evaluation at the mid-term ("***Mid-Term Evaluation***"). The aim of the evaluations is to review progress during Compact implementation and provide a context for interpreting monitoring data and evaluation findings. The evaluation must at a minimum: (i) evaluate the efficiency and effectiveness of the Activities; (ii) determine if and analyse the reasons why the Compact Goal, Program Objective and Project Objective, outcome(s) and output(s) were or were not achieved; (iii) identify positive and negative unintended results of the Program; (iv) provide lessons learned that may be applied to similar projects; and (v) assess the likelihood that results will be sustained over time. The evaluations shall rely on data collected from the Indicator Tracking Table (ITT) and views expressed by MCA-M staff, Project Partners, Fiscal and Procurement Agents, Contractors, Consultants and key stakeholders. The evaluation will be performed by an independent third party consultant procured by MCA-M.

5.1.4 Compact Completion Report (Final Self-Evaluation)

The Final Evaluation will be a major component of the Compact Completion Report (CCR). The CCR is the close-out report required by MCC; the CCR will require reporting from several units within MCA-M, not only M&E. The Final Evaluation is the portion of this report which is contributed by the MCA M&E unit.

The Final Evaluation will assess the actual results of the Program against the Compact goals, objectives and outcomes. The emphasis of the evaluation will be to assess how Compact activities have affected poverty and economic growth, while also examining the more general impact of the Program and the sustainability of the projects. Therefore the final evaluation will include the following issues:

- In what ways and to what extent has the Compact program made a positive impact on poverty reduction and economic growth;
- To what extent were the planned objectives achieved for the program;
- Effectiveness of program activities: Which of Compact program components where the most effective? Why? Which program components were the least effective? Why?
- Attribution of measurable outcomes to MCC/MCA-M interventions;
- Reasons behind the success or failure to achieve goals, objectives and targets;
- What were the most significant constraints and/or difficulties in implementing the program and, where appropriate, how did Compact overcome them;
- Unintended results of the program (positive and negative);
- Long-term sustainability of results;
- Re-estimated economic rates of return, comparisons to original estimates, and assessment of differences;
- Lessons learned applicable to similar projects;
- To what extent were the recommendations from the Mid-Term evaluation implemented.

A Final Evaluation Report contracted by MCA-M has to be submitted one month before the end date of the Compact.

5.1.5 Ad Hoc Evaluations and Special Studies

5.1.5.1 *Corporate Governance Benchmarking Study*

MCC and MCA shall conduct a Corporate Governance Benchmarking Study by Year 2 of the Compact. The study will review best practices and benchmarks for corporate governance of electric utilities, and will compare Malawi to regional, continental and international benchmarks. The information will be used to assess the quality of progress made in reforming the sector, and shall be reviewed by the semiannual committee.

5.1.5.2 *Regulatory Benchmarking Study*

MCC and MCA shall conduct a Regulatory Benchmarking Study by Year 2 of the Compact. The study will review best practices and benchmarks for regulation of electric utilities, and will compare Malawi to regional, continental and international benchmarks. The study's objective is to support the GoM's commitment to further develop independent and capable governance

of MERA in order to support investment in generation and grid capacity at an affordable cost, with the potential participation of the private sector. The information will be used to assess the quality of progress made in reforming the sector, and shall be reviewed by the semiannual committee.

5.1.5.3 *Special Research Grants*

In order to build capacity of the University of Malawi and researchers, MCA may provide special grants to assess agreed research related to the Compact activities.

5.2 Specific Evaluation Plans

All evaluations shall attempt to answer the following core questions:

1) Determine if and analyse the reasons why the Compact Goal, objectives and outcomes were or were not achieved.
2) What are the unintended (positive or negative) results of the project?
3) What is the cost-effectiveness or re-estimated project rate of return based on realized activity benefits and costs?
4) What is the likelihood that results will be sustained over time?
5) How do the project's benefits and / or costs accrue differently to a) poor and non-poor, b) urban and rural communities, and c) men and women? What is the reason for these differences?

The Malawi Compact's sole focus on the energy sector represents a valuable opportunity to learn about the benefits of Malawi's energy sector investments. It is expected that the information produced by Compact evaluations and monitoring will assist the GOM and stakeholders in evidence-based planning and policymaking.

Given the objectives of both GOM and MCC to foster sustainable economic growth and poverty reduction, the evaluations shall, to the extent feasible, attempt to assess the income benefits of beneficiaries linked to the Compact. To the extent that income cannot be reliably measured, MCC will seek to learn how the projects affect intermediate outcomes necessary for these investments to improve social welfare and promote long-term economic growth.

Some of the key intermediate economic benefits streams included in the ERR calculations, and which will drive the evaluations of the Compact, are reduction in energy costs to consumers. Of particular interest are also variables of expanded investment, firm profits, employment, and increased productivity by firms.

The evaluations will also attempt to assess the project's impact on key economic issues reviewed in the Constraints to Growth Analysis,[25] which includes business losses due to power interruptions, investment in manufacturing, mining and tourism, employment and hidden costs or implicit subsidies in the energy sector as a percentage of GDP and utility revenue.[26]

[25] See Malawi Constraints Analysis Final Report, May 2008[26] Africa Infrastructure Diagnostic Study, 2009

[26] Africa Infrastructure Diagnostic Study, 2009

To the greatest extent possible, the Compact analyses will disaggregate results by gender, age, formal / informal sectors and income-quartile. In this way, MCC can assess the program logic and causal linkages underlying the Malawi compact projects

Evaluation Name	Evaluation Type	Evaluator	Primary or Secondary Methodology	Evaluation Reports
				Final
Power Sector Reform Project	Performance	Independent Evaluator(s) TBD	Pre-Post with comparison population (benchmarking); Interrupted Time Series with mixed methods and case studies	2020
Infrastructure Development Project	TBD	Independent Evaluator(s) TBD	Pre-Post; potential quasi-experimental design using Interrupted Time Series, Regression Discontinuity and/or Differences-and-Differences with comparison group matching	2020
ENRM Project	TBD	Independent Evaluator(s) TBD	TBD	2020

Table 6: Summary of Evaluations

5.2.1 Power Sector Reform Project

The reforms under the Compact are geared towards improving utility performance, governance of ESCOM, regulatory effectiveness and independence of MERA, and the creation of a policy environment that attracts private sector participation in the power sector and gender equity. The planned evaluations under the Power Sector Reform Project will assess the causal relationship between changes in sector policy, institutions, regulation and governance with:

i. Increased household access;
ii. Reduced implicit subsidies in the sector;
i. Improved ESCOM financial sustainability;
ii. Improved ESCOM operational performance and sustainability;
iii. Increased private investment in generation;
iv. Sustainable maintenance of power infrastructure;
v. Improved quality of service and supply.

5.2.1.1 Power Sector Reform Project Evaluation Questions

Primary Questions

1. Did public sector and regulatory reforms improve access to power?
2. Did utility reforms improve financial management at ESCOM?
3. Is the ESCOM Board performing according to existing and new statues, bylaws, Articles and Memoranda?
4. To what extent have Compact activities improved operational efficiency and the cost of producing power?
5. How does an increase in tariff affect consumption of electricity by different income groups, gender, formal and informal firms?
6. Did the price adjustment of electricity tariffs affect the profitability and productivity of business enterprises?
7. To what extent do improvements in MERA independence and regulatory capacity result in improved quality of service and supply by ESCOM?

8. To what extent do improvements in sector governance and regulation lead to increased private investment, generation capacity and electricity coverage?

Secondary Questions

9. To what extent have steps taken under the Compact and by the GOM improved measures of customer satisfaction?
10. Is ESCOM meeting performance targets set by the shareholder and/or MERA? Why/why not?
11. To what extent have procurement activities improved adherence to Procurement principles and procedures? How and to what extent did ESCOM improve the outreach and communication activities for greater effectiveness and gender sensitivity?

5.2.1.2 Evaluation Methodology Description

Given the structure of the interventions, a randomized control trial to assess the impact of the project overall is likely not possible. It is difficult to hypothesize a counterfactual to explain what would have happened in the absence of the Compact program and / or Power Sector Reform Project. For example, development of centralized institutions makes randomization difficult because it is problematic to establish treatment and control groups and eliminate spillovers. However, an RTC many explored as part of the SGA activities focused on life-tariffs and affordability of power for the poor. MCC and the MCA-M will explore impact evaluation opportunities on this issue during the first year of the Compact.

While Randomized Control Trial (RCTs) are upheld as the "gold standard," there has been a growing recognition that theory-based evaluations using a mixed-methods approach are necessary for understanding not just what works, but why it works. Any comprehensive and rigorous evaluation of reform and institution building should be theory-based and, to the extent possible, use mixed methods, including multiple approaches to quantitative and qualitative data collection and analysis, to move past the type of reform and institutional evaluations that equate outputs with outcomes, and to acknowledge the particular significance political and economic contexts have on the impact of such programs. Mixed methods will help:

- Understand implementation to accommodate dynamic learning;
- Understand process to obtain impact (functional form);
- Understand impact pathways and explain impact failures;
- Write evaluation questions; and
- Explain point estimates.

The evaluation will try to use mixed methods to mitigate key challenges of isolating attribution, establishing a valid counterfactual and linking elements of the program logic in a way that validates or invalidates program theory. Institutional and operational reforms of ESCOM can be compared with other comparator utilities, while policy, institutional and market reforms can be compared to other institutional models. These comparisons may serve as rough (albeit limited) "with-project" and "without-project" scenarios where a counterfactual is constructed based on a "without project" assumption drawn from concurrent performance of other institutions or utilities.

The evaluation will also consider doing cross-case analysis and benchmarking to further validate the impact of the program and strengthen the analysis, as other projects, institutional

frameworks or utilities could act as counterfactuals. This is particularly helpful in the case of reform and institutional interventions where it is sometimes difficult to generalize from micro-level results given the complex realities of politics in different contexts. However, this approach could increase the cost of data collection as data will also have to be collected on the "counterfactuals" or case studies. MCC will conduct further due diligence on this evaluation approach once an evaluator is hired and can provide detailed cost estimates.

5.2.1.3 Evaluation Risks

The key risks identified are summarized below:

PSRP Evaluation Risk	
Risk	**Mitigation Strategy**
1. Limited ability to attribute impact in the absence of controls and due to interaction effects of multiple interventions and activities outside of the Compact	• Identify all projects to be implemented in intervention area during compact implementation period including their effects.
2. Numerous and evolving interventions under the reform project, with un-specified outcomes, makes it difficult for M&E to keep up-to-date with activities and establish clear baseline or pre-intervention assessment from which to evaluate results	• Develop plan to track and monitor qualitative impacts using mixed methods. • Develop clear project logic for Power Sector Reform project • Close monitoring of ENRM/reform activities, and collaboration between M&E and Project teams
3. Ability to measure behavior change resulting from institutional, policy and other interventions is challenging given the unspecified nature of reforms	• Develop plan to use mixed methods to strengthen observations. • Early focus on clarifying individual logic of reform interventions (Context, Change Mechanism, Outcomes), including understanding functional form and time frame for change • Establishing or documenting as clearly as possible baseline conditions
3. Limited power of studies to detect statistically significant effects on the following outcomes: a. Income b. Business profits c. Perceptions-based outcomes	• Hire a competent and specialist External Impact Evaluator firm
4. Timeline during implementation changes and it is difficult for M&E to keep up with the implementation schedule. The majority of outcomes may be realized post-Compact.	• Develop a post-compact strategy and work closely/partner with Ministry of Economic Planning and Development – M&E Department in monitoring and evaluation of compact projects.

Table 7: Summary of PSRP Evaluation Risks

5.2.2 Infrastructure Development Project

The Infrastructure Development Project will rehabilitate, upgrade and modernize ESCOM's generation, transmission and distribution assets in most urgent need of repair or upgrading, in order to preserve existing generation, improve the capacity of the transmission system, and increase the efficiency and sustainability of hydropower generation. To facilitate the development and implementation of the Program, MCC is providing support for the Government's ability to identify and prioritize investments in the sector by developing an integrated resource plan. MCC Funding will also support significant investments in the power

system infrastructure to preserve generation and stabilize and modernize the transmission and distribution network. The evaluations under the infrastructure development project aim to assess the causal relationships between changes in power infrastructure capacity with:

i. Increased access to electricity;
ii. Cost-effective realization of infrastructure expansion plans;
i. Reduced outages;
ii. Improved power quality;
iii. Reduced technical losses;
iv. Improved ESCOM financial sustainability,
v. Improved ESCOM operational performance;
vi. Sustainable maintenance of power infrastructure.

5.2.2.1 Evaluation Questions

Primary Questions

1. Did infrastructure improvements in generation, transmission and distribution improve the operational and technical performance of the power utility – ESCOM?
2. What is the energy consumption tradeoffs experienced with improved reliability of power?
3. Did the infrastructure improvements in generation, transmission and distribution increase the profitability and productivity of enterprises?
4. To what extent do small, medium, and large agricultural, manufacturing and services firms respond to more reliable, accessible, and/or higher quality power by:
    a. Expanding or intensifying production?
    b. Expanding employment?
    c. Investing in expanded plant or other fixed assets and/or different production technologies reliant on electricity?
    d. To the extent feasible, what is the likely magnitude of the impact on wage and investment incomes? Why?
    e. Is there a difference in impacts for formal and informal firms in Malawi? If so, what is the main source of these differences?
    f. What are the differential impacts on female-headed businesses as well as other vulnerable groups

Secondary questions

5. To what extent does the reliability of electricity increase the use of electricity as a main source of cooking energy?
6. To what extend does the provision of electricity increase female and child expenditure of time on non-household work and/or leisure?

5.2.2.2 *Evaluation Methodology Description*

Potential evaluation methodologies to be employed include using a combination of approaches, to include potentially interrupted time series approach, exogenous spatial variation due to the project, combined if sufficiently informative with phased implementation of the infrastructure projects. The incremental impacts of improved reliability, quality and access to power will be estimated by comparing key intermediate outcomes, including changes in business investments

and productivity, between businesses with access to infrastructure improvements, those without access to improvements, and for those in areas or zones that experience greater or lesser improvements in electricity due to differential levels of infrastructure upgrading.

Potential Treatment and Controls					
	Project	**Impact Areas**	**Outcomes**	**Timing**	**Notes**
Control 1	Pre-Compact conditions	Blantyre, Mzuzu, Lilongwe	–	Pre-Compact trends	
Control 2	Kapichira II	Blantyre	– Reduced business sales losses – Reduced diesel consumption – Reduced load shedding – Increase employment – Increase businesses – Reduce unplanned outages	Compact EIF	The 400 kV and 132 kV Transmission infrastructure funded by the compact will not be in place to evacuate power beyond Blantyre
Treatment 1	400 kV Phombeya-Lilongwe	Lilongwe, Mzuzu	– Reduced business sales losses – Reduced diesel consumption – Reduced load shedding – Increase employment – Increase businesses – Reduced load shedding – Reduce unplanned outages	Compact Year 3	Confounders – impacts may be affected by the timing of other planned investments, e.g., proposed 220 kV lakeshore transmission line from Phombeya – Salima – Nkhotakota – Chintheche - Mzuzu
Treatment 2	400 kV + 132 kV transmission line	Mzuzu	– Reduced business sales losses – Reduced diesel consumption – Reduced load shedding – Increase employment – Increase businesses – Reduce unplanned outages	Compact Year 4	Confounders – impacts may be affected by the timing of other planned investments, e.g., proposed 220 kV lakeshore transmission line from Phombeya – Salima – Nkhotakota – Chintheche - Mzuzu

Table 8: Potential Treatment and Control Options

5.2.2.3 *Evaluation Risks*

The key risks identified are summarized below:

Infrastructure Development Project Evaluation Risk	
Risk	**Mitigation Strategy**
1. Limited ability to isolate and attribute results on the project due to challenges of identifying proper evaluation controls and the interaction effects of other interventions outside of the project on compact outcomes	• Identify all projects to be implemented in intervention area during compact implementation period including their effects.
2. Availability of power is likely to remain below notional demand for many years, therefore, the Compact and customers may not be able to detect impacts relative to load shedding, outages and voltage quality	• Monitor other donor, private sector and GOM efforts to improve power supply Ensure that a Power Sector Integrated Master Plan is developed and implemented by Government • Establish long term, post-compact evaluation plans
3. Limited statistical power of studies to detect statistically significant effects on the following outcomes: a. Income b. Business profits c. Perceptions-based outcomes	• Hire a competent and specialist External Impact Evaluator firm • Conduct power calculations on key variables
4. Potential for timeline or activity changes during implementation changes makes it is difficult for M&E to keep up with the implementation schedule. The majority of outcomes may be realized post-Compact.	• Develop a post-compact strategy and work closely/partner with Ministry of Economic Planning and Development – M&E Department in monitoring and evaluation of compact projects. • Close project coordination with project teams and M&E through an evaluation stakeholder committee that meets quarterly
5. Viability of potential control and treatment groups in infrastructure may be undermined due to competing investments planned by Government.	• Coordination with MOE and ESCOM on project infrastructure development and timelines • Maintain clear implementation schedules with clear understanding of time frame for expected results

Table 9: Infrastructure Development Project Evaluation Risks

Other on-going and relevant projects that may also impact compact outcomes include:

Other Power Sector Interventions		
Funder	**Project**	**Timing**
ESCOM	– Construction and commissioning of 46MW diesel power plants distributed in all three regions.	TBD
Chinese Firms	– Construction and commissioning of 64MW hydro power plant at Kapichira falls – Kapichira II	December 2013
	– Transmission line from Phombeya – Salima – Nkhotakota – Chintheche at 220 kV	TBD
	– Transmission line from Chintheche – Mzuzu - Bwengu at 220 kV	TBD
	– Construction and commissioning of 300MW coal fired power plant at Kamm'amba in Neno	TBD
Japanese International Cooperation Agency (JICA)	– Construction and commissioning of 21MW hydro power plant at Tedzani – Tedzani IV project – Construction and commissioning of 20MW hydro power plant at Kapichira – Kapichira II project	TBD
World Bank	– Interconnector with Mozambique	TBD
	– Completion of Feasibility studies on western transmission backbone line including construction of the	TBD

Other Power Sector Interventions		
Funder	**Project**	**Timing**
	line	
	– Completion of distribution investments as key driver of benefits to end user. – Metering	TBD
Other Private Sector Investments	– Construction and commissioning of 120MW coal fired power plant in Salima by Intra Energy – Construction and commissioning of hydro power plant along Bua River in Nkhotakota	TBD

Table 10: Other Power Sector Interventions

5.2.3 ENRM Project

The MCC funded feasibility study conducted by ICF/CORE International assessed the impact of weed and sedimentation on the hydro-power plants along the Shire River. The study found that weed production is dependent on various factors such as rainfall, water flow, nutrient levels and population of bio-control agents. However, no historical data exists to assess the variability and extent of weed problems along the Shire River. The Environment and Natural Resources Management Project shall aim to control two major problems that may affect weed and silt management and these include investments aimed at reducing water nutrient levels and increasing the population of bio-control agents in the upper and middle Shire River. The evaluations will aim to assess the causal relationships between the project and changes in the following results:

i. Improved watershed management;
ii. Sustainable land management;
i. Reduced generation outages related to weed and sedimentation;
ii. Reduced water turbidity;
iii. Improved conservation practices and behaviours.

5.2.3.1 ENRM Project Evaluation Questions

Primary Questions

1. What extent did weed harvester, barriers / booms and dredgers reduce the frequency and duration of outages and improve the plant availability factor of hydro-power plants on the Shire? Information should be disaggregated based the various harvesting and generation sites targeted by the program
2. Did the Payment for Ecosystem Services mechanism lead to sustainable financing scheme for supporting viable interventions to improve land use practices in the upper Shire basin?
3. Did sustainable land management practices implemented in the upper Shire River lead to reduced soil erosion?
    a. To what extent did the ENRM interventions lead to improved land management practices by farmers and communities? Improved land cover? Are there differentiated impacts amongst males and females?
    b. To what extent the SGEF interventions lead to more equitable practices and increased role of women in land management?

Secondary Questions

4. Did the WSM interventions have any adverse effects on the environment or rate of weed growth?

5.2.3.2 ENRM Project Evaluation Methods Description

Sustainable land management practices that will be adopted are not expected to show immediate results as they involve behavioral change. However, it may be important to assess the responsiveness and readiness of households to change or alternatively their reluctance in participating in project interventions being implemented.

The evaluations will be designed to isolate the causal factors linking weed and siltation in the Shire River basin to outages downstream at generation sites, particularly the extent to which palliative weed and silt management measures reduce the frequency and duration of outages and improve plant availability at hydropower plants downstream of Liwonde barrage. Potentially using a difference-in-differences and / or matching design, the evaluation will also attempt to look at how increases in tariff and/or electrification affect consumer energy choices, such as the use of charcoal and fuel wood, and the impact of the latter on the environment. To the extent appropriate, differentiated impacts on different income groups, males versus females, formal and informal firms, and factors such as access or non-access to capital will be explored.

5.2.3.3 ENRM Evaluation Risks

ENRM Evaluation Risk	
Risk	**Mitigation Strategy**
1. Limited ability to isolate and attribute results of the project due to weak evaluation controls and small nature of investments, as well as interaction effects of non-compact activities on outcomes of interest.	• Identify all projects to be implemented in intervention area during compact implementation period including their effects. • Maintain clear implementation schedules with clear understanding of time frame for expected results
2. Limited power of studies to detect statistically significant effects on the following outcomes: a. Income b. Weed and siltation in key catchment areas	• Hire a competent and specialist External Impact Evaluator firm • Conduct power calculations on key variables
3. Potential for timeline or activity changes during implementation changes will make it difficult for M&E team to keep up with the implementation schedule. The majority of outcomes may be realized post-Compact.	• Develop a post-compact strategy and work closely/partner with Ministry of Economic Planning and Development – M&E Department in monitoring and evaluation of compact projects. • Close project coordination with project teams and M&E through an evaluation stakeholder committee that meets quarterly

Table 11: ENRM Evaluation Risks

5.3 Data Collection Plans

To the greatest extent possible, MCA-MW will attempt to harmonize data collection with other existing planned surveys and ensure that the data collected through the project are useful and cost effective. Table 12 below highlights the potential surveys to be financed by MCA during implementation. These may change depending on the final evaluation designs for the activities.

5.3.1 Quantitative Surveys

Quality and reliability of power for customers will be challenging to isolate and track at the household or customer-level, and may require development of a panel outside of the IHS3 using ESCOM's customer database for sampling purposes. It may be possible to utilize specific equipment at key nodes along the ESCOM grid or at the customer level to effectively track individual blackouts and voltage fluctuations experienced at the customer level.

The ESCOM customer database and/or official business register may be used to look at the growth of energy intensive enterprises in Malawi. However, informal firms will be the most challenging to target in an evaluation, especially considering seasonality of business.

Data Collection Plans			
Name	**Type**	**Population Sample**	**Timing**
ENRM Household and Land Use Survey	Longitudinal Panel	Upper and Middle Shire catchment area	2014
Customer Satisfaction Survey	Longitudinal	ESCOM customers stratified by type	2014
Enterprise Survey	Longitudinal	Small, medium and large surveys stratified by sector and region	2014
Third Integrated Household Panel Survey	Longitudinal Panel	National with district and urban and rural representation	2014
Fourth Integrated Household Survey	Longitudinal Panel	National with district and urban and rural representation	2015
Integrated Household Panel Survey	Longitudinal Panel	National with district and urban and rural representation	2017

Table 12: Data Collection Plans

5.3.2 Qualitative Surveys

Prior to designing the evaluation baseline survey, qualitative research (e.g., document reviews, interviews, and focus groups) should be used whenever possible to strengthen survey design (e.g., by helping to identify hypotheses; suggest or test identification strategies; identify topics, questions, response options, proxies, and language for surveys). At the evaluation stage, qualitative research is recommended to assist in interpreting survey results (e.g., reasons for highly successful projects, poor results, and unintended impacts). Qualitative methods may be particularly helpful for understanding social and gender dynamics that influence program outcomes and impacts.

6. IMPLEMENTATION AND MANAGEMENT OF M&E

6.1 Responsibilities

6.1.1 MCA-M M&E/Economics Directorate

The MCA-M M&E Unit will be part of the MCA Management Team, and will be composed of an M&E Director who will have the key responsibility of leading and managing all M&E activities; and two M&E Officers who will support the M&E Director in performing the M&E activities. Additionally, the M&E Unit will hire short-term support on an as needed basis. The M&E Unit will carry out, or hire contractors to complete the following and other related activities:

- Direct implementation of all activities laid out in the M&E Plan and ensure all requirements of the M&E Plan are met by MCA-M;
- Ensure that the M&E Plan and ERR analysis are modified and updated as improved information becomes available;
- Oversee development and execution of an M&E system (including data-collection, data-analysis and reporting systems) integrated with the Management Information System;
- Elaborate and document M&E Policies, Procedures and Processes in an M&E Manual or other format, to be used by all MCA-M staff and project implementers;
- Communicate the M&E Plan and explain the M&E system to all key stakeholders involved in the Compact, particularly project implementers, to ensure a common understanding by all. This could take the form of orientation and capacity building sessions and could focus on issues as:
    - Explaining indicator definitions, data collection methods and timing/frequency of data collection and reporting,
    - Data quality controls and verification procedures,
    - Impact evaluation questions and methodology, etc;

- Develop and use a documentation system to ensure that key M&E actions, processes and deliverables are systematically recorded. This may be accomplished either as part of the M&E information system or independently. The documentation may encompass the following elements:
    - Goal, objective and outcome indicators,
    - Performance indicators (to be developed by implementers and added subsequently to the M&E Plan),
    - Changes to the M&E Plan,
    - Key M&E deliverables including TORs, contracts/agreements, data collection instruments, reports/analyses, etc;
- Develop (with the Communication Unit and ESP/Gender officers) and implement a systematic dissemination approach to ensure participation of all the stakeholders, and to facilitate feedback of lessons learned into the compact implementation process;
- Organize and oversee regular independent data quality reviews on a periodic basis to assess the quality of data reported to MCA-M;
- Participate in project monitoring through site visits, review of project reports and analysis of performance monitoring and other data;
- Update the M&E work plan periodically;
- Contribute to the design of the impact evaluation strategy;

- Collaborate with the Procurement Director to prepare and conduct procurement of M&E contracts;
- Ensure that data collection mechanisms are designed to collect data disaggregated by gender, age, and other dimensions, as applicable and practical, and that the findings are presented at the appropriate disaggregated level;
- As the champion of results based management, the M&E Unit will take steps to foster a results oriented culture throughout MCA-M and its implementing partners.

The M&E Director will be a part of MCA-M's internal Management Unit, composed from MCA leadership, Project Directors and other Directors. M&E Director will report directly to MCA-M CEO and maintain closest cooperation with Project Directors. Collaboration with procurement team will be very important to prepare and conduct procurement of M&E related contracts as well as ensuring that other implementation contracts contain necessary data reporting provisions.

Seminars, workshops, elaboration and distribution and dissemination of M&E materials shall be conducted in loose cooperation with the MCA Communications Unit.

A general flow of information from all institutions is presented in Figure 4.

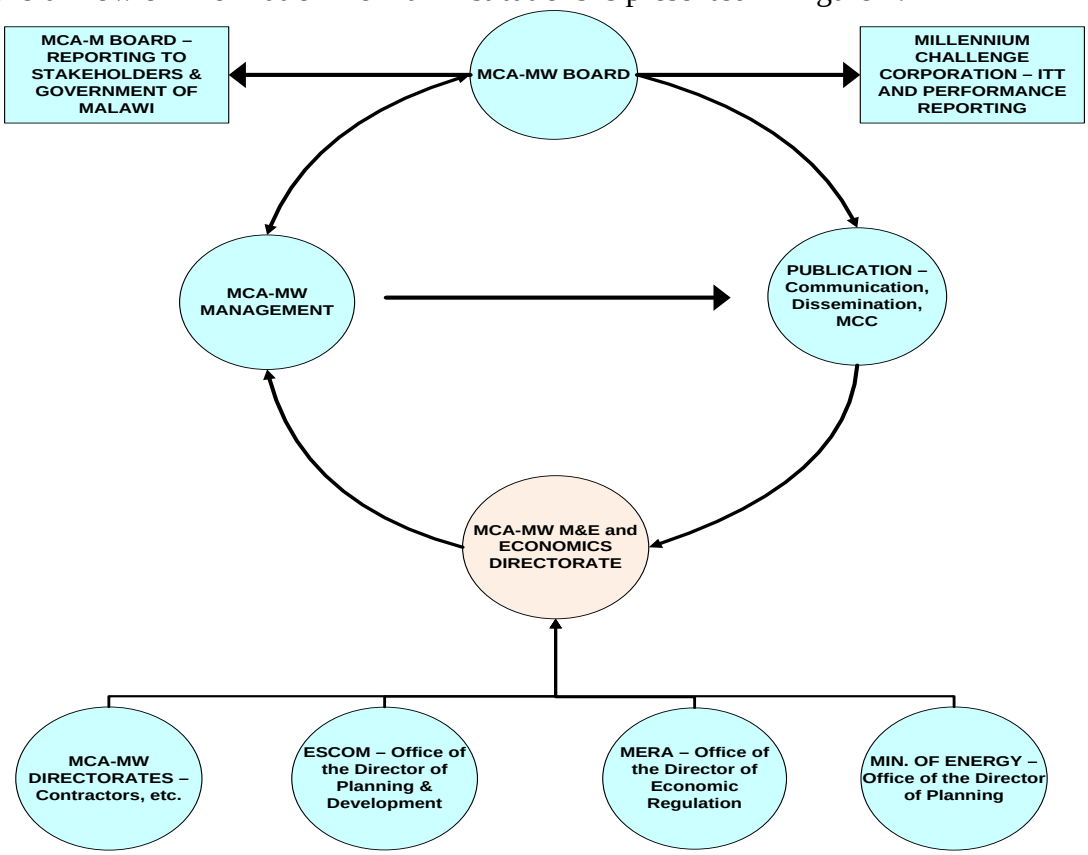


Figure 4: General Information Flow from Compact Project Partners

6.1.1.1 Monitoring and Evaluations (M&E) and Economics Director

The M&E and Economics Director shall be responsible for the overall M&E strategy and Compact review of implementation. The Director shall periodically measure, report and communicate (in collaboration with Public Outreach Specialist) the performance, results and impacts of the Compact, which will inform implementation decisions and help the Compact

achieve its objectives.

The Director will also act as an advisor to the CEO and MCA-M Senior Management. The Director will also analyze the overall program execution, covering both financial and physical implementation and monitoring key assumptions and risks made in the ERR calculations for the program.

6.1.1.2 Monitoring and Evaluation Officer (x2)

The Monitoring and Evaluation Officers shall be responsible for the day to day monitoring and analysis of project-level data, for field visits and quality control, and for providing timely and relevant information and capacity building to key project stakeholders.

6.1.2 Electricity Supply Corporation of Malawi (ESCOM)

As part of its commitments to facilitating implementation of the Compact, ESCOM has entered into a Program Cooperation Agreement (PCA) with MCA-M, which describes key activities that ESCOM will perform and the means by which MCA-M will support ESCOM in performing them. The main M&E-related objectives that will be supported by ESCOM include processes to ensure that it provides accurate and timely data and compilation of the Indicator Tracking Table on all agreed indicators described in the M&E Plan, that it enables regular monitoring and interim and final evaluations of compact results, and ensuring regular, transparent and high quality reporting on compact progress to all stakeholders.

Under the PCA, ESCOM will assign a permanent and qualified M&E point of contact to coordinate M&E requirements for the compact, serve as liaison with MCA-M and relevant program implementing partners and consultants/contractors, and provide formal approval and validation of all M&E reports to MCA-M. ESCOM will also assign regional M&E points of contact and relevant team members to report on M&E data for the Compact as identified in the M&E plan.

ESCOM will also collaborate with MCA-M to ensure the program implementation follows requirements for evaluations. For instance, ESCOM will consult with MCA-M and the Independent Evaluation to provide input and agree on key steps needed to enable a rigorous evaluation based upon the evaluation design and approach, and will ensure that agreed upon steps are followed as planned to maintain conditions necessary to implement Compact evaluations. In addition, ESCOM will provide input and updates to MCA-M and Independent Evaluation team on key risks and developments that may have an impact on the Compact evaluations.

Lastly, as detailed further below, ESCOM will have responsibilities relating to Environmental and Social Performance.

6.1.3 Ministry of Energy

The Ministry of Energy (MoE) will benefit from the Power Sector Reform Project mainly through policy reform and capacity building. MCC Funding will support the Government's efforts to implement a suitable market model based on the studies performed in connection with the development of this Compact. MCC Funding will support MOE's efforts to study and design (1) a single buyer model for the power sector ("***SBM Plan***"); and (2) the building blocks

of a bilateral power trade market. MCC Funding will also assist with stakeholder education and outreach to support consumer organizations, industrial and commercial users, and other key players in advocating for improved service. In addition, MCC will seek to work with Parliament to strengthen its role in oversight of the power sector. Figure 5 presents a summary of information flow from MoE. The MoE Department of Energy will be the key source of all relevant data related to the activities.

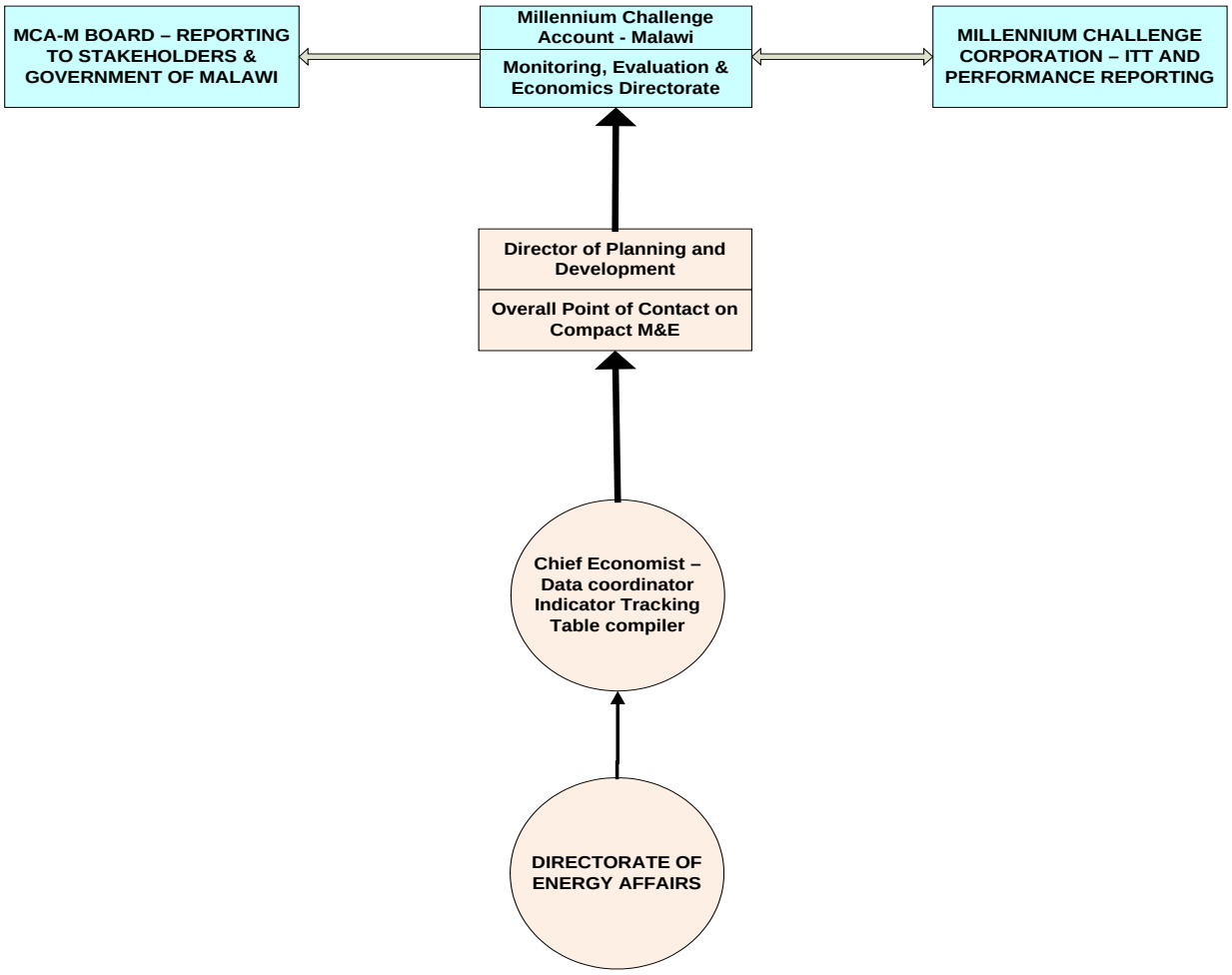
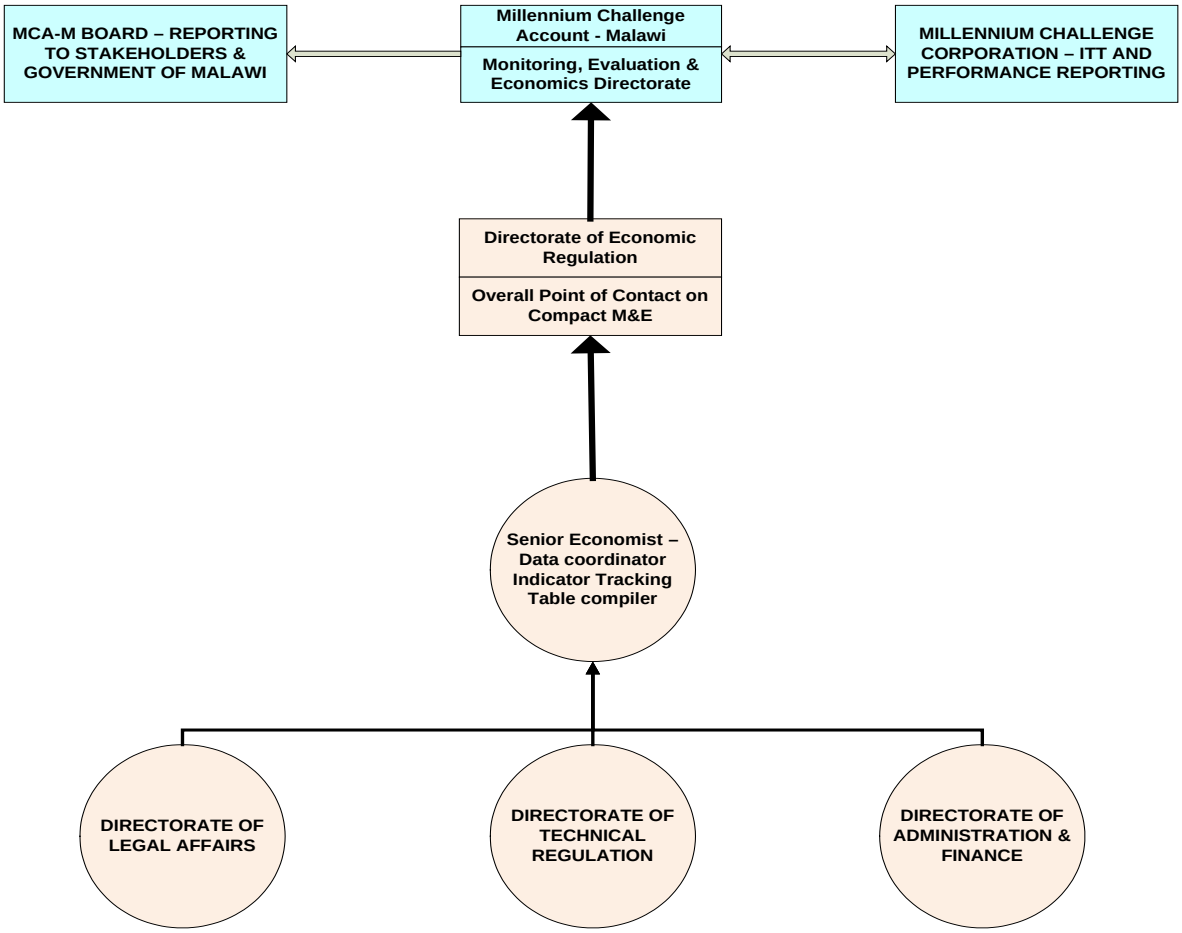


Figure 5: Ministry of Energy Data Flow Diagram

6.1.4 Malawi Energy Regulatory Authority (MERA)

MCC Funding will support capacity building at MERA to improve its regulatory oversight activities and operations. This work will include the development and implementation of training and mentoring of MERA staff and complementary activities designed to develop MERA. MCC Funding will also assist MERA to develop peer relationships with other regulatory bodies or related organizations.

Figure 6 presents a summary of information flow from MERA to MCA Malawi. The Directorate of Economic Regulation shall be responsible for the collection, compilation and reporting of key performance indicators to MCA-M.



6.1.5 Directorate of Environment and Social Performance

Figure 6: MERA Data Flow Diagram

The Directorate of Environment and Social Performance (DESP) will be established within MCA-M to oversee the implementation of the Environmental and Natural Resources Management Project (ENRM) as well as Environmental Impact Assessment (EIA) and Resettlement Action Plan (RAP) activities. Specific monitoring equipment shall be procured to assist in the generation of baseline and targets for the various indicators developed. ESCOM shall be responsible for the implementation of all the mitigation measures outlined in the power sector EIA reports. The Director of Environmental Affairs shall monitor implementation of the EIA mitigation measures to ensure compliance in accordance with the Government of Malawi and MCC environmental best practices.

In particular, the district Department of Planning and Development in collaboration with the District Environmental Officers (DEO) shall be responsible for the submission of progress reports to MCA-M through the Directorate of Environment and Social Performance.

6.1.6 Public Outreach and Transparency

The M&E/Economics Directorate shall ensure that an effective communication strategy is linked with the Public Outreach Section within MCA-M. The key linkages will ensure that reports relating to Financial, Procurement and Engineering are linked to M&E results. Quarterly or Annual Reports developed by the Public Outreach section will be integrated with

M&E reports in their communication strategy.

The M&E/Economics Directorate will coordinate with the Public Outreach Section for progress reports, media briefs, and success stories. Dissemination of M&E information shall be done in accordance with MCA-M Outreach Dissemination Strategy.

6.1.7 Coordination

6.1.7.1 Sector M&E Meetings and Sector Coordination

The M&E/Economics Directorate shall organise and hold, on a quarterly basis, ***Compact Task Force*** meetings that will include members of MCA-M responsible for each project component, members of the Project Partner responsible for each project component, and contractors implementing the project activities. The Task Force meetings shall be chaired by the MCA-M Chief Executive Officer. The Task Force meetings shall be responsible for the following agendas: (a) preparing and reviewing activity monitoring work plans and budgets; (b) improving implementation arrangements between MCA-M, Fiscal and Procurement Agents; (c) reviewing Terms of References (TORs) for studies and reviewing work of consultants and contractors; and (d) reviewing and improving coordination with the Program Partner.

6.1.7.2 MCA-M Board Coordination Meetings

The M&E/Economics Directorate shall be responsible for reporting M&E results to the MCA-M Board on a quarterly basis. The reports will consist of Indicator Tracking Tables (ITTs) as well as written narrative analysis and visuals of indicator performance and progress towards Year 5 targets/results. Recommendations identified by the M&E/Economics Directorate that are crucial to change or guide the implementation of projects are expected to be approved by the MCA-M board.

6.2 MCA-M Management Information System for Monitoring and Evaluation

M&E best practice shows that MCA-M should establish and maintain a management information system (MIS) to track program progress and monitor the effect of each activity with timely and accurate reporting. The MIS should be developed and implemented in agreement with MCC M&E.

It is expected that a comprehensive Management Information System (MIS) will be developed for all of MCA-M during the first year of Compact implementation. As planned, M&E MIS needs will be met through this system. Specifically, the following functionalities are planned for the M&E portion of the system:

- data storage
- automated report preparation
- web based accessibility by the general public-read only
- web based accessibility for data providers-data entry

The M&E Director will be responsible for ensuring that M&E needs are addressed during the development of the comprehensive system.

The system will take into consideration the requirement and data needs of the components of the Program, and will be aligned with the MCC's existing systems, other service providers, and

government ministries. The MIS shall also be an integral part of the Program Partner needs and shall be developed in such a way that it can be utilized by Program Partners after Compact completion.

6.3 Review and Revision of the M&E Plan

The M&E Plan is designed to evolve over time, adjusting to changes in program activities and improvements in performance monitoring and measurement. The M&E Plan may be modified or amended without amending the Compact. However, any such modification or amendment of the M&E Plan by MCA-M must be approved by MCC in writing and must be otherwise consistent with the requirements of the Compact and any relevant Supplemental Agreements. With notice to MCA-M, MCC may make non-substantive changes to the M&E Plan as necessary. Some examples of non-substantive changes could include revising units to correspond to MCC's approved list of units of measurement or standardizing indicator names.

Situations where the M&E Plan must be reviewed include:

(1) Modifying indicators (adding, removing, changing and/or updating definitions, frequencies, sources, etc.).
(2) Modifying baselines and/or targets.
(3) Modifying beneficiary numbers.
(4) Updating other sections of the M&E Plan.

6.3.1 Timing and Frequency of Reviews and Modifications

In the fourth quarter of every year, starting in calendar year 2014, or as necessary, the M&E Director of MCA-M and representatives of MCC M&E staff will review how well the M&E Plan has met its objectives (the "Annual Review"). The review is intended to ensure that the M&E Plan measures program performance accurately and provides crucial information on the need for changes in project design The review is intended to ensure that the M&E Plan:

- Shows whether the logical sequence of intervention outcomes are occurring;
- Checks whether indicator definitions are precise and timely;
- Checks whether M&E indicators accurately reflect program performance;
- Updates indicator targets, as allowed by the MCC M&E Policy; and
- Adds indicators, as needed, to track hitherto unmeasured results.

MCA-M plans to review the M&E Plan annually towards the end of a compact year. However, the M&E Plan may be reviewed and modified at any time. M&E Plans will be kept up-to-date and will be updated after a Modification to the Compact has been approved by MCC.

6.3.2 Documenting Modifications

Justification for deleting an indicator, modifying an indicator baseline or target, modifying Beneficiary information or major adjustments to the evaluation plan will be adequately documented in English and annexed to the revised M&E Plan. MCA Malawi shall use the standard modification template provided by MCC for documenting these modifications.

6.3.3 Approval and Peer Review of M&E Plan Modifications

All M&E Plan modifications made by the MCA Malawi will be submitted to MCC for formal approval. The M&E Plan may undergo peer review within MCC before the beginning of the formal approval process. Before requesting MCC approval, changes to the M&E Plan shall be approved by the MCA Malawi Board of Trustees if they are considered substantial, as determined by MCA Malawi.

7. M&E BUDGET

The budget for the implementation of the proposed M&E activities for the five-year term of the Compact is US$7 million. The line items of this budget will be reviewed and updated as the program develops, on annual or quarterly basis, when the respective quarterly detailed financial plan is submitted to MCC with the quarterly disbursement request.

The M&E budget does not include the M&E staff in the MCA-M Management Unit whose salaries and field trips are included in the administrative budget of the Compact. The budget should not exceed the total amount over the five years, but the distribution of funding between line items and years may be adjusted according to the results of the M&E Plan's annual reviews or quarterly if needed.

While the resources for the carrying-out of surveys are allocated by MCA-M from the Compact funds, the impact analysis is to be funded directly by MCC. MCC will commit to fund the external impact evaluators. The M&E Plan calls for coordination of research design and implementation with the impact analysis.

Table 15 provides a summary budget for M&E activities.

Compact M&E Budget		
Compact Year	Approximate Budget	MCC Evaluation Budget
CIF Period	$387,000	TBD
Year 1	$2,109,129	TBD
Year 2	$779,401	TBD
Year 3	$1,496,871	TBD
Year 4	$352,907	TBD
Year 5	$1,874,691	TBD
Post Compact Year 6		TBD
Post Compact Year 7		TBD
Total	$7,000,000	TBD

Table 13: Estimated Compact M&E Budget

8. OTHER

8.1 M&E Work Plan

The MCA-M M&E Directorate shall develop an M&E work plan based on the proposed activities in the M&E budget. This work plan shall be for the whole duration of the Compact five (5) year period. Main activities shall include the development and implementation of an M&E MIS, procurement of consultant services, procurement of monitoring equipment and software, stakeholder workshops, data collection and analysis, and procurement and implementation of surveys. A detailed M&E work plan is presented in Figure 7.

Table 14: M&E Work Plan

Five Year M&E Work Plan																								
	CIF				Year 1				Year 2				Year 3				Year 4				Year 5			
	2012				2013				2014				2015				2016				2017			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q5	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
M&E Planning																								
Finalize M&E Plan Development Process																								
M&E Plan Stakeholder Consultations																								
Develop and update Annual Work Plan																								
M&E Plan Approval																								
ITT Baseline Data Collection and Finalization																								
Semi-Annual Reviews																								
Develop Activity Monitoring Plans																								
Develop and Launch procurement for MIS																								
Submit Quarterly Narrative Reports																								
Compact Close Out Plan																								
Compact Post Compact M&E Plan																								
M&E Training																								
MCA-MW training on Impact Evaluation																								
MCA-MW Training on MCC M&E																								

Five Year M&E Work Plan																								
	CIF				Year 1				Year 2				Year 3				Year 4				Year 5			
	2012				2013				2014				2015				2016				2017			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q5	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Training for M&E Focal Points from Implementing Partners																								
M&E Implementation																								
Monitoring																								
Equipment purchase and independent monitoring																								
STATA and Licensing																								
Field Visits																								
Compile and analyze data for indicators																								
Submission of indicator tracking table																								
Surveys																								
Fourth Integrated Household Survey																								
Integrated Household Panel Survey																								
Enterprise survey																								
ESCOM Employee Survey																								
Customer Satisfaction Survey																								
Evaluation and Studies																								
Mid-Term Evaluation																								
Final Self Evaluation																								
External Data Quality Review																								
Governance Benchmarking Study																								
Regulatory Benchmarking Study																								
CAPSCAN																								
ERR Recalculation																								
Communication																								
Develop communication tools																								
Study tours and conferences																								

Five Year M&E Work Plan																								
	CIF				Year 1				Year 2				Year 3				Year 4				Year 5			
	2012				2013				2014				2015				2016				2017			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q5	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
M&E workshops with Stakeholders																								
Annual Report																								
KPI updates to MCA Website																								
Updates to "Results Corner" on website																								
Miscellaneous																								
Student / Research grants																								
Ad Hoc Meetings																								
Interim M&E Startup Advisor																								

Annex I: Indicator Definition Table										
Results Statement	Common Indicator	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Additional Information
Compact Wide Indicators										
Sustainable economic growth		Goal	Annual real GDP growth rate	Annual percentages of constant price GDP are year-on-year changes. Real GDP is expressed in billions of national currency units	%		World Economic Outlook Database	International Monetary Fund	Annual	Indicator to measure progress towards Compact goal and MCC mission.
		Goal	Annual real per capita income	GDP is expressed in constant national currency per person. Data are derived by dividing constant price GDP by total population in US$	US$/person		World Economic Outlook Database	International Monetary Fund	Annual	Indicator to measure progress towards Compact goal and MCC mission.
Reduced national poverty rate		Goal	Poverty rate or poverty gap	Number of people living below the poverty line based on PPP international dollars at National Level	%	Urban/Rural; Male/Female - headed households	Malawi Integrated Household Survey	National Statistics Office	Annual	Indicator to monitor trends in poverty rates and assess progress towards Compact goal and MCC mission.
Objective-Level Outcome Indicators										
Improved electricity access and availability		Medium Term Outcome	Customers connected to the grid	Number of customers in Malawi connected to the ESCOM grid	Number	Customer Type	ESCOM Revenue Department	ESCOM	Quarterly	To measure growth in grid connections and household access to electricity. An individual customer is equivalent to a household or firm.
		Medium Term Outcome	Electric Power Consumption per capita	Total kWh billed in all regions / Total Population	kWh/person		ESCOM Power Trading Reports (National Control Center) and NSO population and housing census projections	ESCOM / National Statistics Office	Annual	Proxy for the level and potential for economic development, as well as the sector's ability to benefit from economies of scale. The median figure for SSA excluding South Africa is 155; Latin America is 1,418; Europe, Central Asia 1,808
	P-25	Medium Term Outcome	Percentage of households connected to the national grid	Number of households that have access to a legal connection to electricity service from an electrical utility or service provider / Total number of households in the country	%	Urban/rural Male headed households/Female Headed Households	NSO's Integrated Household Survey/MNREM Reports	NSO/MNREM	Annual	To measure trends in the percentage of the population with access to electricity provided through an electrical utility or other service provider.
Improved availability of hydroelectric power plants (HEP)		Outcome	Percent utilization of HEP	Actual energy generated by the plant (MWh) / Theoretical maximum energy of installed capacity at the plant (MWh)	%	Power Plant	EGENCO Generation Performance Monitoring Reports	EGENCO	Quarterly	Measures the capacity factor of generation plants. This factor should be as high as possible, and should demonstrate a balance between planned and fault maintenance. Can be used as a proxy to measure the effectiveness of ENRM interventions.
		Medium Term Outcome	Investment in Power Sub-Sector - total USD million committed by financial close	Total USD$ million committed by outside parties by financial close	US$ million	Private, Public	Ministry responsible for Energy (MoE)	Ministry of Energy	Annual	Measure of private sector participation in the sector, both in generation and distribution. Targets will be based on Integrated Resource Plan completed in early 2011 and Malawi Electricity Investment Plan.
		Medium Term Outcome	Investment in Power Sub-Sector - MW of investment in Genertation	Total MW of investment in Generation capacity committed by outside parties by financial close	MW	Private, Public	Ministry responsible for Energy (MoE)	Ministry of Energy	Annual	Measure of private sector participation in the sector in generation. Targets will be based on Integrated Resource Plan completed in early 2017 and Malawi Electricity Investment Plan.

Expansion of sector to better meet demand for power	P-15	Medium Term Outcome	Total electricity supply	Total electricity, in megawatt hours, produced or imported in a year	MWh	Power Plant	EGENCO Performance Monitoring Reports	EGENCO	Annual	A measure of growth in generation capacity
	P-17	Medium Term Outcome	Installed generation capacity	Total generation capacity, in megawatts, installed plants can generate within the country.	MW	On-grid/Off-grid	EGENCO Performance Monitoring Reports	EGENCO	Annual	To gauge progress on expansion of the overall power sector, which depends on a variety of factors that may be addressed by MCC investments in both power infrastructure and institutional reform, such as improvements in regulatory independence and effectiveness and the execution of a credible sector expansion plan.
	P-26	Medium Term Outcome	Share of renewable energy in the country	Total installed generation capacity of on- or off-grid renewable energy, in megawatts / Total installed generation capacity	%		MNREM Reports	MNREM	Annual	To track progress on- or off-grid sources of electricity generation derived from naturally replenished resources including such as wind, hydropower, solar energy, biomass, or biofuel
	P-23	Medium Term Outcome	Total electricity sold	The total megawatt hours of electricity sales to all customer types	MWh	Region, Customer type	ESCOM Power Trading Reports (National Control Center)	ESCOM	Annual	A measure of growth in energy consumed.
Infrastructure Development Project										
Reduced energy losses		Outcome	Total system losses (Technical and Non-Technical)	[(Total MWh sent from generation to transmission-Total MWh billed)/Total MWh sent from generation to transmission]	%		ESCOM System Operations Report	ESCOM	Quarterly	To measure total losses in the system, which constitute a loss of revenue and have a direct impact on financial performance, tariff calculations and required fiscal support to ESCOM. Baseline will be re-set after billing system upgrade. 2- 3% is a typically considered good for transmission.
	P-18	Outcome	Transmission System technical losses	1- [Total megawatt hours transmitted out from transmission substations / Total megawatt hours received from generation to transmission substations]	%		ESCOM System Operations Report	ESCOM	Quarterly	To measure losses and performance specific to ESCOM's transmission business.
	P-19	Outcome	Distribution System losses (Technical & Non-Technical)	1 – [Total megawatt hours billed / Total megawatt hours received from transmission]	%		ESCOM System Operations Report	ESCOM	Quarterly	To measure performance within ESCOM's distribution business. The figure includes both technical and non-technical losses in distribution.
Reduced outages		Outcome	Average Frequency of forced outages/interruptions	Lost KVA / installed KVA	ratio		ESCOM Distribution Performance Monitoring Reports	ESCOM	Quarterly	To measure number of outages and frequency. Outage measurements at Tx substations and Gx underestimate the magnitude of outages at the customer level.
		Outcome	Average Duration of outages/interruptions	Total duration of faults per month / Number of faults per month	Hours		ESCOM Distribution Performance Monitoring Reports	ESCOM	Quarterly	To measure duration of outages. Outage measurements at Tx substations and Gx underestimate the magnitude of outages at the customer level.
		Outcome	Total system load shed	Total System Load Shed	MWh		ESCOM Distribution Performance Monitoring Reports	ESCOM	Quarterly	To measure extent and magnitude of Generation shortfalls leading to planned outages.
Improved Voltage Quality		Outcome	Voltage Quality at primary substations	Percentage of time within (±10% transmission and ±6% distribution) voltage range	%	Region Voltage	ESCOM National Control Center - SCADA	ESCOM	Quarterly	To measure quality of supply improvements due to the projects. Substations to include Chinteche, Kanengo, and Mapanga
Nkula A Activity										
Nkula A HPP refurbished and operational	P-6	Output	Generation capacity added	Generation capacity added, measured in megawatts, resulting from construction of new generating capacity or reconstruction, rehabilitation, or upgrading of existing generating capacity funded with MCC support.	MW	(A) On-grid/Off-grid; (B) Renewable (including hydro)/Thermal	EGENCO System Operations Report	EGENCO	Quarterly	To measure generation capacity of Nkula before and after the project
Transmission Network Upgrade Activity										
Transmission lines upgraded, rehabilitated and extended	P-7	Ouput	Kilometers of transmission lines upgraded or built	The sum of linear kilometers of new, reconstructed, rehabilitated, or upgraded transmission lines that have been energized, tested and commissioned with MCC support	Km	Transmission line type (66, 132, 400 kV)	ESCOM System Operations Report	MCA-MW	Quarterly	Indicative measure of improved transmission capacity before and after Compact
T&D Upgrade, Expansion and Rehabilitation Activity										
Total new transmission transformer capacity	P-9	Output	New transmission substation capacity added by compact	The total added transmission substation capacity, measured in megavolt amperes that is energized, commissioned and accompanied by a test report and supervising engineer's certification resulting from new construction or refurbishment of existing substations that is due to MCC support	MVA		ESCOM System Operations Report	MCA-MW	Quarterly	To measure transmission substation capacity of the ESCOM Network

Increased network control and improved data acquisition		Output	SCADA Coverage Transmission	Percent of Transmission Substations with SCADA	%		ESCOM SCADA Department	MCA-MW	Quarterly	To measure operational efficiency of ESCOM Network
Distribution network upgraded, extended, and/or operational	P-10	Output	Kilometres of distribution lines upgraded or built	The sum of linear kilometers of new, reconstructed, rehabilitated, or upgraded distribution lines that have been energized, tested and commissioned with MCC support	Km		ESCOM System Operations Report	MCA-MW	Quarterly	To measure distribution capacity added by the Compact
		Output	Km of New MCC Distribution Cables	Sum of km of new 11 kV cables added by activity	Km		ESCOM System Operations Report	MCA-MW	Quarterly	To measure distribution capacity added by the Compact
	P-11	Output	Distribution substation capacity added by Compact	The total added substation capacity, measured in megavolt amperes, that is energized, commissioned and accompanied by a test report and supervising engineer's certification resulting from new construction or refurbishment of existing substations supported by MCC.	MVA		ESCOM System Operations Report	MCA-MW	Quarterly	To measure distribution capacity before and after Compact implementation
Infrastructure Development Project Process Milestones										
Process Milestones Achieved	P-5	Process	Temporary Employment Generated in power infrastructure construction	The number of people temporarily employed or contracted by MCA-contracted construction companies to work on construction of new power infrastructure or reconstruction, rehabilitation, or upgrading of existing power infrastructure..	Number	Male/Female; Foreign/Local; Skilled/Semi-skilled/Un-skilled	MCA-contracted construction firms	MCA-MW	Quarterly	Designed to monitor temporary employment generated by Compact activities
	P-2	Process	Percent disbursed of power infrastructure feasibility and design contracts	The total amount of all signed feasibility, design, and environmental contracts, including resettlement action plans, for power infrastructure disbursed divided by the total value of all signed contracts.	%		MCA-MW	MCA-MW	Quarterly	This is the percent disbursed of all the Infrastructure Development feasibility and design contracts
	P-1	Process	Value of signed power infrastructure feasibility and design contracts	The value of all signed feasibility, design, and environmental contracts, including resettlement action plans, for power infrastructure investments using 609(g) and compact funds	USD	Project Activity	MCA-MW	MCA-MW	Quarterly	This is the sum total of all the Infrastructure Development Project feasibility and design contracts
	P-2.1	Process	Value disbursed of signed power infrastructure feasibility and design contracts	The value disbursed of all signed feasibility, design, and environmental contracts, including resettlement action plans, for power infrastructure investments using 609(g) and compact funds	USD	Project Activity	MCA-MW	MCA-MW	Quarterly	This is the sum total disbursed of all the Infrastructure Development feasibility and design contracts
	P-4	Process	Percent disbursed of power infrastructure construction contracts	The total amount of all signed construction contracts for power infrastructure investments disbursed divided by the total value of all signed contracts	%		MCA-MW	MCA-MW	Quarterly	This is the percent disbursed of all the Infrastructure Development project construction contracts
	P-3	Process	Value of signed power infrastructure construction contracts	The value of all signed construction contracts for power infrastructure investments using compact funds.	USD	Project Activity	MCA-MW	MCA-MW	Quarterly	This is the sum total of all the Infrastructure Development Project construction contracts. Please note that for Nkula A Refurbishment actvity, the contract amount captured in the M&E Plan only includes MCA-Malawi contribution
	P-4.1	Process	Value disbursed of signed power infrastructure constructionsigned contracts	The value disbursed of all signed construction contracts for power infrastructure investments using compact funds.	USD	Project Activity	MCA-MW	MCA-MW	Quarterly	This is the sum total disbursed of all the Infrastructure Development project construction contracts
POWER SECTOR REFORM PROJECT										
Improved financial sustainability / solvency of ESCOM	P-24	Outcome	Operating cost-recovery ratio	Total revenue collected / Total operating cost. Total operating cost is defined as operating expenses plus depreciation	%	Operating expenses only, Operating expenses plus Depreciation plus Return	ESCOM detailed financial model	ESCOM	Quarterly	Effective tariffs measure electricity price per kWh at different theoretical monthly consumption levels. Together with operating expenses covered with revenues, cost recovery ratio reflects utilities' ability to cover expenditures with revenues
		Outcome	Gearing Ratio	Total long-term debt + short-term debt + Bank Overdrafts/Total Equity	ratio		ESCOM detailed financial model	ESCOM	Quarterly	Measure of the indebtedness of ESCOM, included to track similar indicators proposed
		Outcome	Current Ratio	Total Current Assets / Total Current Liabilities	ratio		ESCOM detailed financial model	ESCOM	Quarterly	Measure of the liquidity or financial security of ESCOM.
ESCOM Turnaround Activity										
		Outcome	Average Collection Period in days (Annual)	365 Days * [(Beginning accounts receivables + ending accounts receivable) / 2) / Total sales]	Days		ESCOM detailed financial model	ESCOM	Annual	Annual measure of the liquidity or financial security of ESCOM and of the efficiency of revenue collection, specifically the time lag between billing and receiving payment. Average collection period of 40 days represents a good revenue collection. The best performers in the region are Rwanda (10), South Africa (46), Lesotho (56) and Namibia (60).

Improved financial management		Outcome	Average Collection Period in days (Quarterly)	91.25 Days * [(Beginning accounts receivables + ending accounts receivable) / 2) / Total sales]	Days		ESCOM detailed financial model	ESCOM	Annual	Quarterly measure of the liquidity or financial security of ESCOM and of the efficiency of revenue collection, specifically the time lag between billing and receiving payment. Average collection period of 40 days represents a good revenue collection. The best performers in the region are Rwanda (10), South Africa (46), Lesotho (56) and Namibia (60).
		Outcome	Average Creditor Days (Annual)	365 * [(Beginning accounts payables + ending accounts payables) / 2) /Total sales]	Days		ESCOM detailed financial model	ESCOM	Annually	Annual measures how long it takes a company to pay its creditors and indicates company's creditworthiness from a suppliers' perspective. A company slow to pay bills – 100 days or more – and which is slow in collecting receivables may have trouble generating cash or obtaining supplies. Indicator should be evaluated next to average collection period.
		Outcome	Average Creditor Days (Quarterly	91.25 * [(Beginning accounts payables + ending accounts payables) / 2) /Total sales]	Days		ESCOM detailed financial model	ESCOM	Quarterly	Quarterly measures how long it takes a company to pay its creditors and indicates company's creditworthiness from a suppliers' perspective. A company slow to pay bills – 100 days or more – and which is slow in collecting receivables may have trouble generating cash or obtaining supplies. Indicator should be evaluated next to average collection period.
		Outcome	Bad Debt	Total value of accounts receivables over 180 days/Total accounts receivable	%		ESCOM detailed financial model	ESCOM	Quarterly	Measure of the liquidity or financial security of ESCOM.
Improved ESCOM operational management and efficiency		Outcome	Average Cost of Electricity Billed	[Total expenses for Gx, Tx and Dx (MK) / Total electricity generated(kWh)]*US$/kWh	US$		ESCOM detailed financial model	ESCOM	Quarterly	Measures the cost of producing 1kWh of electricity, and GOM / ESCOM attempts to reduce total operating costs.
		Output	ESCOM Maintenance Expenditures ratio to planned maintenance budget	Actual maintenance expenditures / Planned maintenance budget as defined in Detailed Financial Plan	%		ESCOM detailed financial model	ESCOM	Quarterly	Proxy measure of sustainability of operational investments in ESCOM.
	P-13	Output	Maintenance expenditure-asset value ratio	Actual maintenance expenditures / Total value of fixed assets	%		ESCOM detailed financial model	ESCOM	Quarterly	Measure of sustainability of operational investments in ESCOM.
Improved management of procurements by ESCOM		Output	Annual Procurement Plans produced by ESCOM	Annual Procurement Plan produced by ESCOM	Number		ESCOM Procurement Department	ESCOM	Annual	Proxy measure for improved financial control, transparency and fiduciary ethics in ESCOM.
ESCOM's financial health improved by ensuring full billing and payment from grid customers		Output	Transition to Pre-paid metering system	Number of customers with pre-paid meters intalled / Total number of customers	%		ESCOM	ESCOM	Quarterly	Indicates progress by ESCOM in transitioning to a pre-paid metering system
		Output	Billing system installed	Install a robust billings system by Calendar Q3 2018	Date		ESCOM	ESCOM	Once	Key action step required for improving revenue collection at ESCOM; indicated in PSRP Implementation Plan
ESCOM's fiduciary duties improved by adopting commercial and corporate governance principles		Output	Financial Plans updated	ESCOM Financial Plan with agreed upon financial ratios and covenants as defined in Annex I under Compact updated	Number		ESCOM detailed financial model	ESCOM	Annual	Reflects on the liquidity or financial security of ESCOM.
		Output	ESCOM Public Annual Report and Audited Financial Statements	Number of Annual Reports and Audited Financial Statements published by ESCOM	Number		ESCOM Director of Finance; ESCOM website - www.escom.mw	ESCOM	Annual	Means for ensuring that ESCOM finances are transparent and accountable to stakeholders
		Output	Cost of Service Study completed	Cost of Service Study to establish long-run marginal costs for ESCOM completed	Date		MCA-MW PSRP Department	MCA-MW	Once	Study to ensure that ESCOM's tariff is cost reflective
		Output	Non-technical loss reduction study	Non-technical loss reduction study condcuted for ESCOM	Date		ESCOM	ESCOM	Once	Key study required to develop loss reduction action plan
		Process	Corporate governance benchmarking study Produced	Procurement and implementation of Corporate governance benchmaking study by Year 2 of Compact Implementation	Date		MCA-MW	MCA-MW	Once	To measure progress in implementing corporate governance benchmarking study at ESCOM
Improved Social and Gender Integration in ESCOM and EGENCO		Output	Number of ESCOM and EGENCO employees who participate in gender trainings	Number of ESCOM and EGENCO employees and Board of Director members who participate in trainings related to ESCOM's gender policy	Number	Male/Female Level (Board, Senior Management, other staff)	Consulting firm conducting the trainings	MCA-MW	Once	Measure of integration social and gender integration in ESCOM and EGENCO

	REGULATORY STRENGTHENING ACTIVITY									
Strengthened regulatory environment	P-14	Output	Cost-reflective tariff regime	Average Tariff per kilowatt-hour / Long-run marginal cost per kilowatt-hour of electricity supplied to customers.	%		ESCOM	ESCOM	Quarterly	
Improved market structure for Private Investment		Output	Power Market Structure report produced	Restructured power market planning and preparation	Date		MERA Reports	MoE	Once	A measure of the creation of an enabling environment for power sector investment by private sector
		Output	Implementation of new power market structure plan	Restructured power market planning and preparation	Date		MERA Reports	MoE	Once	A measure of the creation of an enabling environment for power sector investment by private sector
		Output	Final Draft of Energy Policy produced	Energy policy reviewed - Final draft energy policy produced	Date		MERA Reports	MERA	Once	Key step to support reforms needed to improve market structure and encourage private investment
		Output	Electricity Act Amended	Revised Energy Laws to strengthen electricity market	Date		Ministry of Energy	MoE	Once	Key reforms needed to improve market structure and encourage private investment
		Ouput	Independent Power Producer Framework approved	IPP Framework approved by Ministry responsible for Energy and published on its website	Date		Ministry of Energy	MoE	Once	To track progress on approval of IPP Framework
Process achieved		Process	Sector benchmarking study	Procurement and implementation of Sector benchmaking study by Year 2 of Compact	Date		MCA-MW	MCA-MW	Once	To measure progress in implementing sector benchmarking study for MERA
Power Sector Reform Project Process Milestones										
		Process	Percent disbursed of signed power sector reform project contracts	The total amount of all signed power sector reform investments disbursed divided by the total value of all signed contracts	%		MCA-MW	MCA-MW	Quarterly	Proxy for percent complete of projects and contracts
		Process	Value of signed power sector reform project contracts	The value of all signed contracts for power sector reform investments using compact and 609 (g) funds.	USD	Project Activity	MCA-MW	MCA-MW	Quarterly	Proxy for percent complete of projects and contracts
		Process	Value disbursed of signed power sector reform project contracts	The value disbursed of all signed contracts for power sector reform investments using compact and 609 (g) funds	USD	Project Activity	MCA-MW	MCA-MW	Quarterly	Proxy for percent complete of projects and contracts
Environment and Natural Resources Management Project										
Improved utilization of hydroelectric power plants (HEP)		Outcome	Power plant availability	Unweighted average across all power plants of the following: total number of hours per month that a plant is able and available to produce electricity / Total number of hours in the same month.	%	Power Plant	EGENCO Performance Monitoring Reports	EGENCO	Quarterly	Indicative measure of improved availability of HEPs resulting from ENRM interventions. Plant availability is influenced by numerous other factors including routine maintenance schedules.
		Outcome	Electricity not generated due to weeds and sedimentation	Recorded output (MW) just before outage X Outage duration (h)	MWh	Power Plant	EGENCO Performance Monitoring Reports	EGENCO	Quarterly	To measure outages due to ENRM problems, and thus performance of WSM project
Reduced weed infestation and sedimentation in upper Shire River basin		Outcome	Water turbidity-Liwonde	Total suspended solids using standard methodology	mg/L		Southern and Blantyre Water Boards Monitoring Reports	Southern and Blantyre Water Boards	Quarterly	To measure effectiveness of ENRM activities in Upper Shire River
Reduced weed infestation and sedimentation in upper Shire River basin		Outcome	Water turbidity-Nkula	Total suspended solids using standard methodology	mg/L		Southern and Blantyre Water Boards Monitoring Reports	Southern and Blantyre Water Boards	Quarterly	To measure effectiveness of ENRM activities in Upper Shire River
	Weed and Sediment Management Activity									
Improved management of aquatic weeds		Outcome	Average weed management expenses per ton of weed harvested	Amount spent on weed management/Tons of weed harvested	USD		EGENCO Performance Monitoring Reports	EGENCO	Quarterly	To measure outages due to ENRM problems, and thus performance of WSM project
		Outcome	Amount of weed harvested at Liwonde barrage	Average weight in metric tons of weed harvested at Liwonde barrage per month	Metric Tones (million)		EGENCO Performance Monitoring Reports	EGENCO	Quarterly	To measure outages due to ENRM problems, and thus performance of WSM project
Improved control of sediment		Outcome	Sediment management expenses	Amount spend on sediment management/Tons of sediment reomved	USD		EGENCO Performance Monitoring Reports	EGENCO	Quarterly	To measure outages due to ENRM problems, and thus performance of WSM project

		Output	Weed and Sediment Management Equipment Purchased	Number of WSM equipment purchased and delivered through the Compact	Number	Equipment type	MCA-MW	MCA-MW	Quarterly	To track progress on the purchase of WSM equipment
Environment and Natural Resources Management Activity										
Long-term, sustainable institutional arrangement established to support improved land management and weed control in the upper and middle Shire River basins		Outcome	Trees Survived	Number of trees that have survived in each quarter after being planted	Number		ENMR_SGEF Grants Monitoring Report	MCA-MW	Quarterly	To measure progress on agroforestry activities
		Output	Trees Planted	Number of trees planted	Number		ENMR_SGEF Grants Monitoring Report	MCA-MW	Quarterly	To measure progress on agroforestry activities
		Output	Establishment of a Shire River Basin Environmental Trust	Legal institution registered with the General Registry office with bylaws establishing a mechanism to support land management activities in the Shire River Basin	Date		MCA-MW ESPD Progress Reports	MCA-MW	Once	Sustainable financing and coordination of ENRM activities
		Output	Payment for Ecosystem Services established	An MOU is signed with ESCOM establishing a Payment for Ecosystem Services levy as part of its tariff application	Date		MCA-MW ESPD Progress Reports	MCA-MW	Once	To track progress on establsihment of PES
		Output	Grant agreements in place with civil society and private sector service providers	Number of signed grants with civil society and private sector providers	Number		MCA-MW ESPD Progress Reports	MCA-MW	Quarterly	Indicator of progress implementing a small grants program
		Output	Value of Payment for Ecosystem Services funds disbursed	Value disbursed of total PES funds in support of land management activities in the Shire River Basin	USD		MCA-MW ESPD Progress Reports	MCA-MW	Once	To track progress on establsihment Payment for Ecosystem Services
		Output	Dredged material placement area constructed at Kapichira	The date by which the DMPA is ready for sediment inflow	Date		MCA-MW	MCA-MW	Once	To track progress on construction of dregded material placemet area at Kapichira
	Social and Gender Enhancement Fund									
		Output	Community members engaged in ongoing community level dialogues out of total community members in identified areas"	Number of community members participating in community-level dialogues or initiatives	Number	Gender	MCA-MW ESPD Progress Reports	MCA-MW	Bi-Annual	Represents equitable participation of women in community level decision-making
		Output	Leaders trained on social/gender/natural resource management issues out of total leaders in identified areas	Number of women and men trained in management of natural resources	Number	Gender	MCA-MW ESPD Progress Reports	MCA-MW	Bi-Annual	Measures attainment among women of knowledge and skills to effectively engage in sustainable land management
		Output	Women provided with leadership training	Number of women who enroll and complete leadership training	Number		MCA-MW ESPD Progress Reports	MCA-MW	Bi-Annual	Functional literacy and numeracy skills enable women to adopt business skills needed for marketing of surplus yields
		Output	Women and Men who are members of community/village level committees	Number of women who serve as membrers on community or village-level committees	Number	Gender	MCA-MW ESPD Progress Reports	MCA-MW	Bi-Annual	Indicates equitable representation of women on community-level decision-making bodies
		Output	REFLECT/Reflection-Action Circles established and operational	Number of REFLECT/Reflection-Action Circles that have been formed through project and are operational	Number		ENMR_SGEF Grants Monitoring Report	MCA-MW	Quarterly	To track progress on REFLECT activities
		Output	Members of established REFLECT/Reflection-Action Circles	Number of members enrolled and participating in Reflect/reflection-action circles	Number	Gender	ENMR_SGEF Grants Monitoring Report	MCA-MW	Quarterly	To track progress on REFLECT activities
		Output	VSLs established and Operational	Total number of VSL groups formed and their members contribute funds and obtain loan	Number		ENMR_SGEF Grants Monitoring Report	MCA-MW	Quarterly	To track progress on VSL Activities

		Output	Members of established VSLs	Number of members enrolled and participating in VSLs	Number	Gender	ENMR_SGEF Grants Monitoring Report	MCA-MW	Quarterly	To track progress on VSL Activities
ENRM_SGA Project Process Milestones										
Process achieved		Process	Temporary Employment Generated	The number of people temporarily employed or contracted by MCA-contracted construction companies to work on ENRM_SGA investments	USD	Gender	MCA-contracted construction firms	MCA-MW	Quarterly	Designed to monitor temporary employment generated by Compact activities
		Process	Percent disbursed of signed ENRM_SGA project contracts	The total amount of all signed ENRM_SGA investments disbursed divided by the total value of all signed contracts	%		MCA-MW	MCA-MW	Quarterly	Proxy for percent complete of projects and contracts
		Process	Value of signed ENRM_SGA project contracts	The value of all signed contracts for ENRM_SGA investments using compact and 609(g) funds	USD	Project Activity	MCA-MW	MCA-MW	Quarterly	Proxy for percent complete of projects and contracts
		Process	Value disbursed of signed ENRM_SGA project contracts	The value disbursed of all signed contracts for ENRM_SGA investments using compact and 609(g) funds.	USD	Project Activity	MCA-MW	MCA-MW	Quarterly	Proxy for percent complete of projects and contracts

Annex II: Indicator Baselines and Targets												
Common Indicator	Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact	Additional Information
					2013	2014	2015	2016	2017	2018		
Compact Wide Indicators												
	Goal	Annual real GDP growth rate	%	Level	5.0							Baseline based on April 2013 World Economic Outlook database. This indicator will be monitored annually to monitor trends in real GDP growth rates
	Goal	Annual real per capita income	US$/person	Level	145							Baseline based on April 2013 World Economic Outlook database. This indicator will be monitored annually to monitor trends in real per capita income
	Goal	Poverty rate or poverty gap National	%	Level	54							Baseline based on Third Integrated Household Survey 2010/11. This indicator will be monitored annually to monitor trends in poverty rates
	Goal	Poverty rate or poverty gap in urban areas	%	Level	13							
	Goal	Poverty rate or poverty gap in rural areas	%	Level	40							
	Goal	Poverty rate or poverty gap for male headed households	%	Level	36							Baseline based on Third Integrated Household Survey 2010/11. This indicator will be monitored annually to monitor trends in poverty rates
	Goal	Poverty rate or poverty gap for female headed households	%	Level	47							Baseline based on Third Integrated Household Survey 2010/11. This indicator will be monitored annually to monitor trends in poverty rates
Objective-Level Outcome Indicators												
	Medium Term Outcome	Customers connected to the grid	Number	Level	235,469	250,630	251,883	253,143	254,407	255,684	255,684	
	Medium Term Outcome	Residential Customers connected to the grid	Number	Level	204,524	213,225	214,291	215,363	216,439	217,522	217,522	This data collected during IHS3 conducted during the period March 2010 to March 2011
	Medium Term Outcome	Commercial Customers connected to the grid	Number	Level	30,137	36,645	36,828	37,012	37,197	37,387	37,387	
	Medium Term Outcome	Industrial Customers connected to the grid	Number	Level	808	760	764	768	771	775	775	
P-25	Medium Term Outcome	Percentage of households connected to the national grid	%	Level	7.1							
	Medium Term Outcome	Percentage of households connected to the national grid-Urban	%	Level	33							
	Medium Term Outcome	Percentage of households connected to the national grid-Rural	%	Level	2.4							
	Medium Term Outcome	Percentage of households connected to the national grid-Male-headed household	%	Level	7.8							

	Medium Term Outcome	Percentage of households connected to the national grid-Female-headed households	%	Level	5							
	Medium Term Outcome	Electric Power Consumption per capita	kWh/person	Level	95	99	106	107	115	127	127	Years 1-5 are consistent with the ERR model (2013 values no longer in model)
	Medium Term Outcome	Percent utilization of HEP	%	Level	78.00	90	90	90	90	90	90.00	
	Medium Term Outcome	Percent utilization of HEP - Nkula A	%	Level	85.00					95%	95%	Indicator similar to percent availability extracted from ERR model.
	Medium Term Outcome	Percent utilization of HEP - Nkula B	%	Level	64.00					90%	90%	Indicator similar to percent availability extracted from ERR model.
	Medium Term Outcome	Percent utilization of HEP - Tedzani I & II	%	Level	96.00					95%	95%	Indicator similar to percent availability extracted from ERR model.
	Medium Term Outcome	Percent utilization of HEP - Tedzani III	%	Level	68.00					75%	75%	Indicator similar to percent availability extracted from ERR model.
	Medium Term Outcome	Percent utilization of HEP - Kapichira I	%	Level	75.00					85%	85%	Indicator similar to percent availability extracted from ERR model.
	Medium Term Outcome	Percent utilization of HEP - Kapichira II	%	Level						95%	95%	Indicator similar to percent availability extracted from ERR model.
	Medium Term Outcome	Investment in Power Sub-Sector - total USD Million committed by financial close	US$ million	Cumulative	435							Targets to be sourced from Integrated Resource Plan developed for ESCOM
	Medium Term Outcome	Investment in Power Sub-Sector - Private Sector commitments in $USD	US$ million	Cumulative	0							Targets to be sourced from Integrated Resource Plan developed for ESCOM
	Medium Term Outcome	Investment in Power Sub-Sector - Public Sector commitments in $USD	US$ million	Cumulative	435							Targets to be sourced from Integrated Resource Plan developed for ESCOM
	Medium Term Outcome	Investment in Power Sub-Sector - MW of investment in Generation	MW	Cumulative	64							Targets to be sourced from Integrated Resource Plan developed for ESCOM
	Medium Term Outcome	Investment in Power Sub-Sector - Private Sector MW investment	MW	Cumulative	0							Targets to be sourced from Integrated Resource Plan developed for ESCOM
	Medium Term Outcome	Investment in Power Sub-Sector - Public Sector MW investment	MW	Cumulative	64							Targets to be sourced from Integrated Resource Plan developed for ESCOM
P-15	Medium Term Outcome	Total electricity supply	MWh	Level	1,840,804	1,925,185	2,136,630	2,203,972	2,431,448	2,725,061	2,725,061	Years 1-5 are consistent with the ERR model (2013 values no longer in model)
	Medium Term Outcome	Total electricity supply - Nkula A	MWh	Level	178,692	182,909	124,742	135,517	146,642	224,694	224,694	Years 1-5 are consistent with the ERR model (2013 values no longer in model)

	Medium Term Outcome	Total electricity supply - Nkula B	MWh	Level	560,748	639,480	676,710	713,940	751,170	788,400	788,400	Years 1-5 are consistent with the ERR model (2013 values no longer in model)
	Medium Term Outcome	Total electricity supply - Tedzani I & II	MWh	Level	336,389	332,880	332,880	332,880	332,880	332,880	332,880	Years 1-5 are consistent with the ERR model (2013 values no longer in model)
	Medium Term Outcome	Total electricity supply - Tedzani III	MWh	Level	313,245	337,006	339,314	341,622	343,931	346,239	346,239	Years 1-5 are consistent with the ERR model (2013 values no longer in model)
	Medium Term Outcome	Total electricity supply - Kapichira I	MWh	Level	426,981	414,383	431,412	448,442	465,471	482,501	482,501	Years 1-5 are consistent with the ERR model (2013 values no longer in model)
	Medium Term Outcome	Total electricity supply - Kapichira II	MWh	Level			213,043	213,043	372,826	532,608	532,608	Years 1-5 are consistent with the ERR model (2013 values no longer in model)
	Medium Term Outcome	Total electricity supply - Wovwe	MWh	Level	24,749	18,527	18,527	18,527	18,527	17,739	17,739	Years 1-5 are consistent with the ERR model (2013 values no longer in model)
P-17	Medium Term Outcome	Installed generation capacity (MW)	MW	Level	287							
P-17.1	Medium Term Outcome	Installed generation capacity-On Grid	MW	Level	287							
P-17.2	Medium Term Outcome	Installed generation capacity-Off Grid	MW	Level	0							
P-26	Medium Term Outcome	Share of renewable energy in the country	%	Level	100							
P-26.1	Medium Term Outcome	Total installed generation capacity of on- or off-grid renewable energy	MW	Level	287							
P-26.2	Medium Term Outcome	Total installed generation capacity	MW	Level	287							
P-23	Intermediate Outcome	Total electricity sold	MWh	Level	1,406,549	1,520,896	1,687,937	1,741,138	1,920,844	2,186,861	2,186,861	Years 1-5 are consistent with the ERR model (2013 values no longer in model)
P-23.1	Intermediate Outcome	Total electricity sold - Residential Customers	MWh	Level	575,351	619,005	686,991	708,643	781,783	890,053	890,053	Years 1-5 are consistent with the ERR model (2013 values no longer in model)
	Intermediate Outcome	Total electricity sold - Residential Customers - Northern	MWh	Level	47804	51432	57080	58879	64956	73952	73952	If it's possible to distribute the targets by region + customer type, that would be great. Then we could delete the three overall indicators (highlighted)
	Intermediate Outcome	Total electricity sold - Residential Customers - Central	MWh	Level	223960	240953	267417	275845	304316	346461	346461	
	Intermediate Outcome	Total electricity sold - Residential Customers - Southern	MWh	Level	303586	326620	362493	373918	412511	469640	469640	

P-23.2	Intermediate Outcome	Total electricity sold - Commercial	MWh	Level	214,691	273,761	303,829	313,405	345,752	393,635	393,635	Years 1-5 are consistent with the ERR model (2013 values no longer in model)
	Intermediate Outcome	Total electricity sold - Commercial Customers - Northern	MWh	Level	23,883	30,454	33,799	34,864	38,463	43,790	43,790	
	Intermediate Outcome	Total electricity sold - Commercial Customers - Central	MWh	Level	86,968	110,897	123,077	126,956	140,059	159,456	159,456	
	Intermediate Outcome	Total electricity sold - Commercial Customers - Southern	MWh	Level	103,839	132,410	146,953	151,584	167,230	190,389	190,389	
P-23.2	Intermediate Outcome	Total electricity sold - Industrial Customers	MWh	Level	616,506	628,130	697,118	719,090	793,308	903,174	903,174	Years 1-5 are consistent with the ERR model (2013 values no longer in model)
	Intermediate Outcome	Total electricity sold - Industrial Customers - Northern	MWh	Level	29,748	30,308	33,637	34,697	38,279	43,580	43,580	
	Intermediate Outcome	Total electricity sold - Industrial Customers - Central	MWh	Level	149,059	151,869	168,549	173,861	191,806	218,369	218,369	
	Intermediate Outcome	Total electricity sold - Industrial Customers - Southern	MWh	Level	437,700	445,953	494,932	510,531	563,224	641,225	641,225	
		Infrastructure Development Project										
	Outcome	Total system losses (Technical and Non-Technical)	%	Level	22.0	21	21	21	21	19.8	19.8	Years 1-5 are consistent with the ERR model (2013 values no longer in model)
P-18	Outcome	Transmission System Technical losses	%	Level	10.5	9	9	9	9	8.8	8.8	Projections based on baseline value and consistent with ERR model
P-19	Outcome	Distribution System losses (Technical & Non-Technical)	%	Level	12	12	12	12	12	11.0	11.0	Projections based on baseline value and consistent with ERR model
	Outcome	Average frequency of forced outages/interupptions	Ratio	Level	1.7	1.74	1.5	1.26	1.02	0.78	0.78	Agreed at Baseline and Targets workshop in Blantyre, Malawi held on August 29-30, 2013 with ESCOM
	Outcome	Average Duration of outages/interruptions	Hours	Level	3.65	3.5	3.2	2.8	2.5	2.2	2.2	Agreed at Baseline and Targets workshop in Blantyre, Malawi held on August 29-30, 2013 with ESCOM
	Outcome	Total System load shed	MWh	Level	18,847	28,500	-	8,446	16,934	25,465	25,465	Years 1-5 are consistent with the ERR model (2013 values no longer in model)
	Outcome	Voltage quality at primary substations - Northern Region - Chintheche 132kV	%	Level							90	Due to unreliability of existing data, this indicator will be reassessed once SCADA is online.
	Outcome	Voltage quality at primary substations - Central Region - Lilongwe A 66kV	%	Level							90	Due to unreliability of existing data, this indicator will be reassessed once SCADA is online.
	Outcome	Voltage quality at primary substations - Southern Region - Mlangeni 66kV	%	Level							90	Due to unreliability of existing data, this indicator will be reassessed once SCADA is online.

	Nkula A Activity											
P-6	Output	Generation capacity added	MW	Cumulative	0					12	12	
P-6.1	Output	Generation capacity added - On-grid Renewable	MW	Cumulative	0					12	12	
P-6.2	Output	Generation capacity added-Off-grid Renewable	MW	Cumulative	0							
P-6.3	Output	Generation capacity added- On-Grid Thermal	MW	Cumulative	0							
P-6.4	Output	Generation capacity added- Off-Grid Thermal	MW	Cumulative	0							
	Transmission Network Upgrade Activity											
P-7	Output	Kilometers of transmission lines upgraded or built	Kms	Cumulative	0					367	367	
	Output	Kilometers of transmission lines upgraded or built-New 132-kV lines built	Kms	Cumulative	0					160	160	Do we expect any staggering in completion or all finished in year 5?
	Output	Kilometers of transmission lines upgraded or built-New 66-kV lines built	Kms	Cumulative	0					34	34	Do we expect any staggering in completion or all finished in year 5?
	Output	Kilometers of transmission lines upgraded or built-New 400-kV lines built	Kms	Cumulative	0					173	173	Do we expect any staggering in completion or all finished in year 5?
	T&D Upgrade, Expansion and Rehabiliation Activity											
P-9	Output	New transmission substation capacity added by compact	MVA	Cumulative	0					809	809	Do we expect any staggering in completion or all finished in year 5?
	Output	SCADA Coverage Transmission	%	Level	46					68	68	Do we expect any staggering in completion or all finished in year 5?
P-10	Output	Kilometres of distribution lines upgraded or built	Kms	Cumulative	0					42	42	Do we expect any staggering in completion or all finished in year 5?
	Output	Km of New MCC Distribution Cables	Kms	Cumulative	0					3.0	3.0	Do we expect any staggering in completion or all finished in year 5?
P-11	Output	Distribution substation capacity added by Compact	MVA	Cumulative	0					97	97	Do we expect any staggering in completion or all finished in year 5?
		Infrastructure Development Project Process Milestones										

P-5	Process	Temporary employment generated in power infrastructure construction	Number	Cumulative	0							
P-5.1	Process	Temporary employment generated - Male	Number	Cumulative	0							
P-5.2	Process	Temporary employment generated - Female	Number	Cumulative	0							
P-5.3	Process	Temporary employment generated - Foreign	Number	Cumulative	0							
P-5.4	Process	Temporary employment generated - Local	Number	Cumulative	0							
P-5.5	Process	Temporary employment generated - Skilled	Number	Cumulative	0							
P-5.6	Process	Temporary employment generated - Semi-Skilled	Number	Cumulative	0							
P-5.7	Process	Temporary employment generated - Un-Skilled	Number	Cumulative	0							
P-2	Process	Percent disbursed of power infrastructure feasibility and design contracts	%	Level	0					100	100	
P-1	Process	Value of signed power infrastructure feasibility and design contracts	USD	Cumulative	0					$5,613,816	$5,613,816	
P-2.1	Process	Value disbursed of signed power infrastructure feasibility and design contracts	USD	Cumulative	0					5,613,816	5,613,816	
P-4	Process	Percent disbursed of power infrastructure construction contracts	%	Cumulative	0					100	100	
P-3	Process	Value of signed power infrastructure construction contracts	USD	Cumulative	0					251,501,184	251,501,184	
	Process	Value of signed Nkula A construction contracts	USD	Cumulative	0					31,620,690	31,620,690	
	Process	Value of signed Transmission Network Upgrade Activity construction contracts	USD	Cumulative	0					156,253,386	156,253,386	156,253,386
	Process	Value of signed T&D Upgrade Activity construction contracts	USD	Cumulative	0					63,627,108	63,627,108	161,867,202
P-4.1	Process	Value disbursed of signed power infrastructure construction contracts	USD	Cumulative	0					251,501,184	251,501,184	

	Process	Value disbursed of signed Nkula A construction contracts	USD	Cumulative	0					31,620,690	31,620,690	
	Process	Value disbursed of signed Transmission Network Upgrade Activity construction contracts	USD	Cumulative	0					156,253,386	156,253,386	
	Process	Value disbursed of signed T&D Upgrade Activity construction contracts	USD	Cumulative	0					63,627,108	63,627,108	
	Power Sector Reform Project											
P-24	Outcome	Operating cost-recovery ratio (based on operating expenses + Depreciation)	%	Level	150	135	149	140	134	128	128	Targets extracted from ESCOM Detailed Financial Model
	Outcome	Operating cost-recovery ratio (based on operating expenses)	%	Level	161	141	160	155	151	150	150	Targets extracted from ESCOM Detailed Financial Model
	Outcome	Operating cost-recovery ratio - based on operating expenses + depreciation + return (weighted average cost of capital (WACC) X rate base)	%	Level	113	100	100	100	100	100	100	Targets extracted from ESCOM Detailed Financial Model
	Outcome	Gearing Ratio	ratio	Level	0.25	0.66	0.66	0.66	0.66	0.66	0.66	
	Outcome	Current Ratio	ratio	Level	6.48	3	3	3	3	3	3	Changed from 2-4 to 3
	ESCOM Turnaround Activity											
	Outcome	Average Collection Period in days (Annual)	Days	Level	72	60	60	60	60	60	60	Targets based on ESCOM standards for average debtor days. This will be reported on annual and quarterly basis
	Outcome	Average Collection Period in days (Quarterly)	Days	Level	72	60	60	60	60	60	60	
	Outcome	Bad Debt	%	Level	25	12	7	5	2	2	2	Targets extracted from ESCOM Detailed Financial Model
	Outcome	Average Creditor Days (Annual)	Days	Level	27	45	45	45	45	45	45	Targets based on ESCOM standards for average creditor days. This will be measures both annually and quarterly
	Outcome	Average Creditor Days (Quarterly)	Days	Level	27	45	45	45	45	45	45	
	Outcome	Average Cost of Electricity Billed	US$	Level-Average	0.07							
P-13	Output	Maintenance expenditure-asset value ratio	%	Level (Cumulative)						2.50	2.50	
	Output	ESCOM Maintenance Expenditures ratio to planned maintenance budget	%	Level	128	100	100	100	100	100	100	Agreed at Baseline and Targets workshop in Blantyre, Malawi held on August 29-30, 2013 with ESCOM
	Output	Annual Procurement Plans produced by ESCOM	Number	Cumulative	0	1	2	3	4	5	5	

	Output	Transition to Pre-paid metering system	%	Level	36	50	100	100	100	100	100	
	Output	Billing system installed	Date	Date						30-Apr-18	30-Apr-18	
	Output	Financial Plans updated	Number	Cumulative	0	1	2	3	4	5	5	
	Output	ESCOM Public Annual Report and Audited Financial Statements	Number	Cumulative	0	1	2	3	4	5	5	
	Output	Cost of Service Study completed	Date	Date						31-Oct-17	31-Oct-17	
	Output	Non-technical loss reduction study	Date	Date				5-Oct-15			5-Oct-15	
	Process	Corporate governance benchmarking study - Report finalized	Date	Date					30-Sep-17		30-Sep-17	Targets based on revised work plan
	Output	Number of ESCOM and EGENCO employees who participate in gender trainings	Number	Cumulative	0					2,500	2,500	
	Output	Number of ESCOM and EGENCO employees who participate in gender trainings - Male	Number	Cumulative	0							
	Output	Number of ESCOM and EGENCO employees who participate in gender trainings - Female	Number	Cumulative	0							
	Output	Number of ESCOM and EGENCO employees who participate in gender trainings - Board	Number	Cumulative	0							
	Output	Number of ESCOM and EGENCO employees who participate in gender trainings - Senior Management	Number	Cumulative	0							
	Output	Number of ESCOM and EGENCO employees who participate in gender trainings - Other Staff	Number	Cumulative	0							
Regulatory Strengthening Activity												
P-14	Output	Cost-reflective tariff regime	%	Level		100%	100%	100%	100%	100%	100%	
P-14.1	Output	Average tariff per kilowatt-hour	USD	Level	0.08	0.10	0.12	0.12	0.13	0.13	0.13	
P-14.2	Output	Long-run marginal cost per kilowatt-hour of electricity supplied to customers	USD	Level						TBD	TBD	
	Output	Power Market Structure report produced	Date	Date			31-Dec-14				31-Dec-14	

	Output	Implementation of new power market structure plan	Date	Date						30-Jun-18	30-Jun-18	Agreed at Baseline and Targets workshop in Blantyre, Malawi held on August 8, 2013 with Ministry of Energy and MERA
	Output	Final draft energy policy produced	Date	Date				30-Jun-16			30-Jun-16	Agreed at Baseline and Targets workshop in Blantyre, Malawi held on August 8, 2013 with Ministry of Energy and MERA
	Output	Electricity Act Amended	Date	Date					31-Dec-16		31-Dec-16	Agreed at Baseline and Targets workshop in Blantyre, Malawi held on August 8, 2013 with Ministry of Energy and MERA
	Output	Independent Power Producer Framework approved	Date	Date					31-Mar-17		31-Mar-17	This was already approved in May 2017
	Process	Sector benchmarking study completed - Report finalized	Date	Date					30-Sep-17		30-Sep-17	Targets based on revised work plan
Power Sector Reform Project Milestones												
	Process	Percent disbursed of signed power sector reform project contracts	%	Level	0					100	100	
	Process	Value of signed power sector reform project contracts	USD	Cumulative	0					25,700,000	25,700,000	
	Process	Value of signed ESCOM Turnaround Activity contracts	USD	Cumulative	0					19,350,000	19,350,000	
	Process	Value of signed Regulatory Strenthening Activity contracts	USD	Cumulative	0					6,350,000	6,350,000	
	Process	Value disbursed of signed power sector reform project contracts	USD	Cumulative	0					25,700,000	25,700,000	
	Process	Value disbursed of signed ESCOM Turnaround Activity contracts	USD	Cumulative	0					19,350,000	19,350,000	
	Process	Value disbursed of signed Regulatory Strengthening Activity contracts	USD	Cumulative	0					6,350,000	6,350,000	
Enivronment and Natural Resources Management Project												
	Medium Term Outcome	Power plant availability	%	Level	90	78	69	71	78	89	89	
	Medium Term Outcome	Power plant availability - Nkula A	%	Level	92	77	53	57	62	95	95	Years 1-5 are consistent with the ERR model (2013 values no longer in model)
	Medium Term Outcome	Power plant availability - Nkula B	%	Level	86	73	77.25	81.50	85.75	90	90	Years 1-5 are consistent with the ERR model (2013 values no longer in model)
	Medium Term Outcome	Power plant availability - Tedzani I & II	%	Level	98	73	73.50	74	74.50	75	75	Years 1-5 are consistent with the ERR model (2013 values no longer in model)

	Medium Term Outcome	Power plant availability - Tedzani III	%	Level	99	95	95	95	95	95	95	Years 1-5 are consistent with the ERR model (2013 values no longer in model)
	Medium Term Outcome	Power plant availability - Kapichira I	%	Level	97	73	76	79	82	85	85	Years 1-5 are consistent with the ERR model (2013 values no longer in model)
	Medium Term Outcome	Power plant availability - Kapichira II	%	Level			38	38	66.50	95	95	Years 1-5 are consistent with the ERR model (2013 values no longer in model)
	Outcome	Electricity not generated due to weeds and sedimentation	MWh	Level	4640					2320	2320	
	Outcome	Electricity not generated due to weeds and sedimentation - Nkula	MWh	Level	3129					1564.5	1564.5	
	Outcome	Electricity not generated due to weeds and sedimentationn - Tedzani	MWh	Level	562					281	281	
	Outcome	Electricity not generated due to weeds and sedimentation - Kapichira	MWh	Level	949					474.5	474.5	
	Outcome	Water turbidity - Liwonde	Mg/L	Level-Average	96.6							Expected to source data (including baseline) from Sourthern and Blantyre Water Boards monitoring reports
	Outcome	Water turbidity - Nkula	Mg/L	Level-Average	522.2							Expected to source data (including baseline) from Sourthern and Blantyre Water Boards monitoring reports
Weed and Sediment Management Activity												
	Outcome	Average weed management expenses per ton of weed harvested	USD	Level	34							
	Outcome	Amount of weed harvested at Liwonde barrage	Metric Tonnes	Level	2,561							
	Outcome	Sediment management expenses	USD	Level	71,597							
	Output	Weed and Sediment Management Equipment Purchased	Number	Cumulative	0					7	7	
	Output	Weed and Sediment Management Equipment Purchased-Dredgers	Number	Cumulative	0					2	2	
	Output	Weed and Sediment Management Equipment Purchased-Harvesters	Number	Cumulative	0					2	2	
	Output	Weed and Sediment Management Equipment Purchased-Trucks	Number	Cumulative	0					2	2	
	Output	Weed and Sediment Management Equipment Purchased-Conveyor	Number	Cumulative	0					1	1	
Enivronment and Natural Resources Management Activity												

	Outcome	Trees Survived	Number	Cumulative	0			1,092,480	1,680,993	2,868,473	2,868,473	
	Output	Tree Planted	Number	Cumulative	0			1,341,867	2,984,751	4,451,618	4,451,618	
	Output	Establishment of a Shire River Basin Environmental Trust	Date	Date					31-Dec-16		31-Dec-16	
	Output	Payment for Ecosystem Services established	Date	Date						30-Jun-18	30-Jun-18	
	Output	Grant agreements in place with civil society and private sector service providors	Number	Cumulative	0			11	11	11	11	
	Output	Value of Payment for Ecosystem Services funds disbursed	USD	Cumulative	0							
	Output	Dredged material placement area constructed at Kapichira	Date	Date						31-May-18	31-May-18	
Social and Gender Enhancement Fund												
	Output	Community members engaged in ongoing community level dialogues out of total community members in identified areas"	Number	Cumulative	0			11,995	23,300	24,980	24,980	
	Output	Community members engaged in ongoing community level dialogues out of total community members in identified areas" - Male	Number	Cumulative	0			4,196	8,449	9,287	9,287	
	Output	Community members engaged in ongoing community level dialogues out of total community members in identified areas" - Female	Number	Cumulative	0			7,799	14,851	15,693	15,693	
	Output	Leaders trained on social/gender/natural resource management issues out of total leaders in identified areas	Number	Cumulative	0			2,484	4,773	6,073	6,073	
	Output	Leaders trained on social/gender/natural resource management issues out of total leaders in identified areas - Male	Number	Level	0			1,179	2,241	2,891	2,891	
	Output	Leaders trained on social/gender/natural resource management issues out of total leaders in identified areas - Female	Number	Cumulative	0			1,305	2,532	3,182	3,182	
	Output	Women provided with leadership training	Number	Cumulative	0			1,285	2,167	2,787	2,787	
	Output	Women and Men who are members of community/village level committees	Number	Level	0			3,915	7,760	8,560	8,560	

	Output	Women and Men who are members of community/village level committees - Male	Number	Level	0			2,151	3,806	4,206	4,206	
	Output	Women and Men who are members of community/village level committees - Female	Number	Level	0			1,764	3,954	4,354	4,354	
	Output	REFLECT/Reflection-Action Circles established and operational	Number	Cumulative	0					312	312	
	Output	Members of established REFLECT/Reflection-Action Circles	Number	Cumulative	0					6,761	6,761	
	Output	Members of established REFLECT/Reflection-Action Circles-Male	Number	Cumulative	0					1,676	1,676	
	Output	Members of established REFLECT/Reflection-Action Circles-Female	Number	Cumulative	0					5,085	5,085	
	Output	VSLs established and Operational	Number	Cumulative	0					447	447	
	Output	Members of established VSLs	Number	Cumulative	0					19,245	19,245	
	Output	Members of established VSLs - membership Male	Number	Cumulative	0					7,466	7,466	
	Output	Members of established VSLs - membership Female	Number	Cumulative	0					11,799	11,799	
ENRM Project Milestons												
	Process	Percent disbursed of signed ENRM_SGA project contracts	Percentage	Level	0					100	100	
	Process	Value of signed contracts for ENRM Project	USD	Cumulative	0					27,885,000	27,885,000	
	Process	Value of signed Weed & Sediment Management Activity contracts	USD	Cumulative	0					15,885,000	15,885,000	
	Process	Value of signed ENRMAP contracts	USD	Cumulative	0					10,000,000	10,000,000	
	Process	Value of signed SGEF Activity contracts	USD	Cumulative	0					2,000,000	2,000,000	
	Process	Value disbursed of signed contracts for ENRM Project	USD	Cumulative	0					27,885,000	27,885,000	
	Process	Value disbursed of signed Weed & Sediment Management Activity contracts	USD	Cumulative	0					15,885,000	15,885,000	

	Process	Value of disbursed ENRMAP contracts	USD	Cumulative	0					10,000,000	10,000,000	
	Process	Value of disbursed SGEF Activity contracts	USD	Cumulative	0					2,000,000	2,000,000	

GOVERNMENT OF MALAWI

MONITORING AND EVALUATION

Monitoring and Evaluation Plan Modifications Memo

Millennium Challenge Account – Malawi

P. O. Box 31513

Lilongwe

Malawi

September 2014

1. MCA-MALAWI M&E PLAN MODIFICATIONS

The MCA-Malawi M&E Plan was approved on September 13, 2013 by the MCA-Malawi Board of Trustees. On September 19, 2013, the MCC also approved the M&E Plan. The M&E Plan documents the key performance indicators that will be used to measure progress on implementation of Compact interventions as well as evaluation criteria.

On August 30, 2013, MCA-Malawi engaged the services of a consulting firm, CRISIL Risk and Infrastructure Solutions Limited (CRIS), to carry out a data quality review assignment for a period of six months – September 2013 to March 2014. The objective of the assignment was to ensure that the data collected and reported for the Compact program by project partners is accurate and of high quality. The expected outputs of the exercise that were achieved were the following: (i) revised indicators, baseline values and targets; (ii) improved data collection and reporting processes; (iii) skills requirements and capacity strengthening areas; and (iv) the development of a Data Quality Review manual. Modifications to a number of indicators were proposed by the Consultant that necessitates a review of the approved M&E Plan.

The purpose of this memo, therefore, is to document all the changes to the agreed Compact indicators that have occurred between the period when the M&E Plan was approved in September 2013 and finalization of the Data Quality Review assignment in March 2014. These changes include the following:

A. Policy and Structural Changes

1. No changes will be effected

B. Results Statements and Compact Benefits.

1. No changes will be effected.

C. Indicators and Targets

1. Modifications to indicator names and definitions
2. Modifications to baseline values due to revised data
3. Modifications to target values due to revised data

Table 1: Indicator Modification Template – Semi-Annual Review Indicators

ERR linked	Level	Indicator or Result Statement	Unit	Definition	Modification	Original Assumptions & Rationale	Justification for Change
No	Intermediate Outcome	Average Cost of Electricity Billed	US$/kWh	[Total expenses for Gx, Tx and Dx (MWK) / Total electricity generated(kWh)]*US$/kWh	(1) We propose to change the indicator definition to the following: **[Operating expense plus depreciation plus return (weighted average cost of capital (WACC) X rate base)]/ Total electricity billed (kWh)]*US$/MWK** (2) We propose to change the indicator baseline and annual targets as indicated in table 3	Measures the cost of producing 1kWh of electricity, and GOM / ESCOM attempts to reduce total operating costs.	Recommendation from DQR Report (Vol. 1, p. 3) (1) the average cost of 'electricity billed' should therefore take into account this loss and the total cost be divided by the energy billed and not divided by energy generated to arrive at the average cost of electricity sold (2) Further, the exchange rate used for conversion is not specified nor has been the source specified
No	Intermediate Outcome	Average Collection Period in days	Days	365 Days * [(Beginning accounts receivables + ending accounts receivable) / 2) / Total sales]	(1) We propose to change the definition as follows: **365 Days * [(Beginning accounts receivables + ending accounts receivable) / 2) / Total post-paid sales]** (2) We propose to change the baseline value from 55 days to 54 days (see table 3) (3) We propose to change the target values commencing year three from 60 days to 45 days (see table 3)	Measure of the liquidity or financial security of ESCOM and of the efficiency of revenue collection, specifically the time lag between billing and receiving payment. Average collection period of 40 days represents a good revenue collection. The best performers in the region are Rwanda (10), South Africa (46), Lesotho (56) and Namibia (60).	DQR Recommendation: (1) The target of "average collection period in days" should be lower than the baseline to show an improvement (2) New definition has affected baseline value.
No	Intermediate Outcome	Bad Debt	%	Percentage of accounts over 90 days / Total accounts receivable	(1) We propose to change the definition as follows **Total value of accounts receivables over 90 days/Total accounts receivable**		DQR Main Report page 48
Yes	Intermediate Outcome	Total electricity consumed	MWh	Total MWh sales in all regions	(1) We propose to change the indicator baseline value as indicated in table 3	A measure of growth in energy consumed	(1) Revised baseline data from audited accounts (2) Targets may remain the same as they are sourced from ERR Model

Table 2: Indicator Modification Template – General Indicators

ERR linked	Level	Indicator or Result Statement	Unit	Definition	Modification	Original Assumptions & Rationale	Justification for Change
No	Goal	Annual real GDP growth rate	%	Annual percentages of constant price GDP are year-on-year changes. Real GDP is expressed in billions of national currency units	(1) We propose to change the indicator baseline value as indicated in table 3	Indicator to measure progress towards Compact goal and MCC mission.	Updated baseline data collected for IMF World Economic Outlook Database, October 2013
No	Goal	Annual real per capita income	US$	Gross domestic product, current prices (US$) / Total Population	(1) We propose to change the indicator baseline value as indicated in table 3	Indicator to measure progress towards Compact goal and MCC mission.	Baseline data used GDP at current prices to estimate real per capita income which was not correct.
No	Medium Term Outcome	Investment in Power Sub-Sector - total USD million committed by financial close	US$	Total USD$ million committed by outside parties by financial close	(1) We propose to change the indicator definition to **Total USD$ million committed by public and private sector entities by financial close on all investments in the power subsector (Generation, Transmission and Distribution)**	Measure of private sector participation in the sector, both in generation and distribution. Targets will be based on Integrated Resource Plan completed in early 2011 and Malawi Electricity Investment Plan.	The Energy Sector covers a wide array of sub-sectors that include power (electricity), petroleum, gas, fuelwood, etc. DQR Main Report, Vol. II Recommendation, p. 37
No	Medium Term Outcome	Investment in Power Sub-Sector - MW of investment	MW	Total MW of investment in Generation capacity committed by outside parties by financial close	(1) We propose to change the indicator name to **Investment in Power Sub-Sector - MW of investment in Generation** (2) We propose to change the indicator definition to **Total MW of investment in Generation capacity completed and energized by public and private sector entities**		The Energy Sector covers a wide array of sub-sectors that include power (electricity), petroleum, gas, fuelwood, etc. The new definition is specific to investments in the power (electricity) subsector.
No	Intermediate Outcome	Hidden cost of electricity	%	Total value of under-pricing, technical and non-technical losses, and bills not collected as percentage of revenue of the utility	(1) We propose dropping this indicator	Proxy indicator for efficiency in the management of the energy sector. The metric includes value of any subsidies in the sector.	Indicator is not direct or unambiguous and it will be difficult to attribute changes solely on the Compact projects.
Yes	Intermediate Outcome	Customers connected to the grid	Number	Number of customers in Malawi connected to the ESCOM grid	(1) We propose to change the indicator baseline and target values from TBD to as indicated in table 3	To measure growth in grid connections and household access to electricity. An individual customer is equivalent to a	New data available from ESCOM Sales Statistics

ERR linked	Level	Indicator or Result Statement	Unit	Definition	Modification	Original Assumptions & Rationale	Justification for Change
Yes	Intermediate Outcome	Residential Customers connected to the grid	Number	*Number of residential customers in Malawi connected to the ESCOM grid*	(1) We propose to change the indicator baseline and target values from TBD to as indicated in table 3	household or firm	
Yes	Intermediate Outcome	Commercial Customers connected to the grid	Number	*Number of commercial customers in Malawi connected to the ESCOM grid*	(1) We propose to change the indicator baseline and target values from TBD to as indicated in table 3		
Yes	Intermediate Outcome	Industrial Customers connected to the grid	Number	*Number of industrial customers in Malawi connected to the ESCOM grid*	(1) We propose to change the indicator baseline and target values from TBD to as indicated in table 3		
Yes	Intermediate Outcome	Percent Plant availability of HEP	%	Average number of hours that power plants are able to produce electricity / total number of hours in a month	(1) We propose to change the indicator baseline value as indicated in table 3	Indicative measure of improved availability of HEPs resulting from ENRM interventions. Plant availability is influenced by numerous other factors including routine maintenance schedules.	New baseline data for added indicator sourced from ESCOM Generation Statistics
Yes	Intermediate Outcome	Percent availability of HEP - Nkula A	%	Total number of hours that Nkula A is able to produce electricity / total number of hours in a month	(1) We propose to change the indicator baseline value as indicated in table 3		New baseline data for added indicator sourced from ESCOM Generation Statistics
Yes	Intermediate Outcome	Percent availability of HEP - Nkula B	%	Total number of hours that Nkula B is able to produce electricity / total number of hours in a month	(1) We propose to change the indicator baseline value as indicated in table 3		New baseline data for added indicator sourced from ESCOM Generation Statistics
Yes	Intermediate Outcome	Percent availability of HEP - Tedzani I & II	%	Total number of hours that Tedzani I & II is able to produce electricity / total number of hours in a month	(1) We propose to change the indicator baseline value as indicated in table 3		New baseline data for added indicator sourced from ESCOM Generation Statistics
Yes	Intermediate Outcome	Percent availability of HEP - Tedzani III	%	Total number of hours that Tedzani III is able to produce electricity / total number of hours in a	(1) We propose to change the indicator baseline value as indicated in table 3		New baseline data for added indicator sourced from ESCOM Generation Statistics

ERR linked	Level	Indicator or Result Statement	Unit	Definition	Modification	Original Assumptions & Rationale	Justification for Change
				month			
Yes	Intermediate Outcome	Percent availability of HEP - Kapichira I	%	Total number of hours that Kapichira I is able to produce electricity / total number of hours in a month	(1) We propose to change the indicator baseline value as indicated in table 3		New baseline data for added indicator sourced from ESCOM Generation Statistics
Yes	Intermediate Outcome	Percent availability of HEP - Kapichira II	%	Total number of hours that Kapichira II is able to produce electricity / total number of hours in a month	(1) We propose to change the indicator baseline value as indicated in table 3		New baseline data for added indicator sourced from ESCOM Generation Statistics
Yes	Intermediate Outcome	Percent utilization of HEP	%	Total Actual energy generated by Power Plants (MWh) / Theoretical maximum energy output of all Power Plants (MWh)	(1) We propose to change the indicator baseline value as indicated in table 3		Revised baseline data from Project Partner collected at end of period FY2012 from ESCOM Generation Statistics
Yes	Intermediate Outcome	Percent utilization of HEP - Nkula A	%	*Actual energy generated by Nkula (MWh) / Theoretical maximum energy of installed capacity at Nkula (MWh)*	(1) We propose to change the indicator baseline value as indicated in table 3	Measures the use factor of generation plants. This factor should be as close to the demand target as possible, and should demonstrate a balance between planned and fault maintenance. Can be used as a proxy to measure the effectiveness of ENRM interventions	Revised baseline data from Project Partner collected at end of period FY2012 from ESCOM Generation Statistics
Yes	Intermediate Outcome	Percent utilization of HEP - Nkula B	%	*Actual energy generated by Nkula (MWh) / Theoretical maximum energy of installed capacity at Nkula (MWh)*	(1) We propose to change the indicator baseline value as indicated in table 3		Revised baseline data from Project Partner collected at end of period FY2012 from ESCOM Generation Statistics
Yes	Intermediate Outcome	Percent utilization of HEP - Tedzani I & II	%	*Actual energy generated by Tedzani (MWh) / Theoretical maximum energy of installed capacity at Tedzani (MWh)*	(1) We propose to change the indicator baseline value as indicated in table 3		Revised baseline data from Project Partner collected at end of period FY2012 from ESCOM Generation Statistics
Yes	Intermediate Outcome	Percent utilization of HEP - Tedzani III	%	*Actual energy generated by Tedzani (MWh) / Theoretical maximum energy of installed capacity at Tedzani (MWh)*	(1) We propose to change the indicator baseline value as indicated in table 3		Revised baseline data from Project Partner collected at end of period FY2012 from ESCOM Generation Statistics

ERR linked	Level	Indicator or Result Statement	Unit	Definition	Modification	Original Assumptions & Rationale	Justification for Change
Yes	Intermediate Outcome	Percent utilization of HEP - Kapichira I	%	*Actual energy generated by Kapichira I (MWh) / Theoretical maximum energy of installed capacity at Kapichira I (MWh)*	(1) We propose to change the indicator baseline value as indicated in table 3		Revised baseline data from Project Partner collected at end of period FY2012 from ESCOM Generation Statistics
Yes	Intermediate Outcome	Percent utilization of HEP - Kapichira II	%	*Actual energy generated by Kapichira II (MWh) / Theoretical maximum energy of installed capacity at Kapichira II (MWh)*	(1) We propose to change the indicator baseline value as indicated in table 3		Revised baseline data from Project Partner collected at end of period FY2012 from ESCOM Generation Statistics
Yes	Intermediate Outcome	Total electricity consumed - Residential	MWh	Total MWh sales in all regions – Residential	(1) We propose to change the indicator baseline value as indicated in table 3	A measure of growth in energy consumed	(1) Revised baseline data from audited accounts Targets may remain the same as they are sourced from ERR Model
No	Intermediate Outcome	Total electricity consumed - Northern - Residential	MWh	Total MWh sales in all regions – Northern – Residential	(1) We propose to change the indicator baseline value as indicated in table 3 (2) We propose to change the indicator annual target values as indicated in table 3	A measure of growth in energy consumed	Address DQR Recommendation: (1) Neither the baseline nor the target values have been estimated for specified consumer category for each region (2) New baseline data available from ESCOM Monitoring and Reporting Template
No	Intermediate Outcome	Total electricity consumed - Central - Residential	MWh	Total MWh sales in all regions – Central – Residential	(1) We propose to change the indicator baseline value as indicated in table 3 (2) We propose to change the indicator annual target values as indicated in table 3	A measure of growth in energy consumed	Address DQR Recommendation: (1) Neither the baseline nor the target values have been estimated for specified consumer category for each region (2) New baseline data available from ESCOM Monitoring and Reporting Template
No	Intermediate Outcome	Total electricity consumed - Southern- Residential	MWh	Total MWh sales in all regions – Southern – Residential	(1) We propose to change the indicator baseline value as indicated in table 3We propose to change the indicator annual target values as indicated in table 3	A measure of growth in energy consumed	Address DQR Recommendation: (1) Neither the baseline nor the target values have been estimated for specified consumer category for each region (2) New baseline data available from ESCOM Monitoring and Reporting Template
Yes	Intermediate Outcome	Total electricity consumed - Commercial	MWh	Total MWh sales in all regions – Commercial	(2) We propose to change the indicator baseline value as indicated in table 3	A measure of growth in energy consumed	Address DQR Recommendation: (1) Neither the baseline nor the target values have been estimated for specified consumer category for each

ERR linked	Level	Indicator or Result Statement	Unit	Definition	Modification	Original Assumptions & Rationale	Justification for Change
							region (2) New baseline data available from ESCOM Monitoring and Reporting Template
No	Intermediate Outcome	Total electricity consumed - Northern - Commercial	MWh	Total MWh sales in all regions – Northern – Commercial	(1) We propose to change the indicator baseline value as indicated in table 3 (2) We propose to change the indicator annual target values as indicated in table 3	A measure of growth in energy consumed	Address DQR Recommendation: (1) Neither the baseline nor the target values have been estimated for specified consumer category for each region (2) New baseline data available from ESCOM Monitoring and Reporting Template
No	Intermediate Outcome	Total electricity consumed - Central - Commercial	MWh	Total MWh sales in all regions – Central – Commercial	(1) We propose to change the indicator baseline value as indicated in table 3 (2) We propose to change the indicator annual target values as indicated in table 3	A measure of growth in energy consumed	Address DQR Recommendation: (1) Neither the baseline nor the target values have been estimated for specified consumer category for each region (2) New baseline data available from ESCOM Monitoring and Reporting Template
No	Intermediate Outcome	Total electricity consumed - Southern- Commercial	MWh	Total MWh sales in all regions – Southern – Commercial	(1) We propose to change the indicator baseline value as indicated in table 3 (2) We propose to change the indicator annual target values as indicated in table 3	A measure of growth in energy consumed	Address DQR Recommendation: (1) Neither the baseline nor the target values have been estimated for specified consumer category for each region (2) New baseline data available from ESCOM Monitoring and Reporting Template
Yes	Intermediate Outcome	Total electricity consumed - Industrial	MWh	Total MWh sales in all regions – Industrial	(1) We propose to change the indicator baseline value as indicated in table 3	A measure of growth in energy consumed	Address DQR Recommendation: (1) Neither the baseline nor the target values have been estimated for specified consumer category for each region (2) New baseline data available from ESCOM Monitoring and Reporting Template
No	Intermediate Outcome	Total electricity consumed - Northern - Industrial	MWh	Total MWh sales in all regions – Northern – Industrial	(1) We propose to change the indicator baseline value as indicated in table 3 (2) We propose to change the indicator annual target values as indicated in table 3	A measure of growth in energy consumed	Address DQR Recommendation: (1) Neither the baseline nor the target values have been estimated for specified consumer category for each region (2) New baseline data available from ESCOM Monitoring and Reporting Template

ERR linked	Level	Indicator or Result Statement	Unit	Definition	Modification	Original Assumptions & Rationale	Justification for Change
No	Intermediate Outcome	Total electricity consumed - Central - Industrial	MWh	Total MWh sales in all regions – Central – Industrial	(1) We propose to change the indicator baseline value as indicated in table 3 (2) We propose to change the indicator annual target values as indicated in table 3	A measure of growth in energy consumed	Address DQR Recommendation: (1) Neither the baseline nor the target values have been estimated for specified consumer category for each region (2) New baseline data available from ESCOM Monitoring and Reporting Template
No	Intermediate Outcome	Total electricity consumed - Southern- Industrial	MWh	Total MWh sales in all regions – Southern – Industrial	(1) We propose to change the indicator baseline value as indicated in table 3 (2) We propose to change the indicator annual target values as indicated in table 3	A measure of growth in energy consumed	Address DQR Recommendation: (1) Neither the baseline nor the target values have been estimated for specified consumer category for each region (2) New baseline data available from ESCOM Monitoring and Reporting Template
INFRASTRUCTURE DEVELOPMENT PROJECT INDICATORS							
Yes	Outcome	Total system losses (Technical and Non-Technical)	%	[(Total MWh sent from generation to transmission-Total MWh billed)/Total MWh sent from generation to transmission]	(1) We propose to change indicator definition to **{[(Total MWh sent from generation to transmission + Net imports) -Total MWh billed]/ (Total MWh sent from generation to transmission + Net imports)}** (2) We propose to change the indicator baseline value from 21.8% to 22.0%	To measure total losses in the system, which constitute a loss of revenue and have a direct impact on financial performance, tariff calculations and required fiscal support to ESCOM.	New baseline data available from ESCOM Generation Statistics
Yes	Outcome	Transmission System losses (Technical)	%	[(Total MWh received by transmission from generation-Total MWh sent from transmission to distribution)/Total MWh received by transmission from generation]	(1) We propose to change the indicator baseline value from 9.8% to 10.5% (2) We propose to change indicator definition to cater for future improvements to **{(Total MWh received by transmission from generation – (Total MWh sent from transmission to distribution substation + Total MWh sent from transmission to dedicated feeders supplying transmission industrial customers)) / (Total MWh received by transmission from generation}**	To measure losses and performance specific to ESCOM's transmission business	New baseline data available from ESCOM Generation Statistics

ERR linked	Level	Indicator or Result Statement	Unit	Definition	Modification	Original Assumptions & Rationale	Justification for Change
					(3) We propose to add source of data from Power Trading Report		
Yes	Outcome	Distribution System losses (Technical & Non-Technical)	%	[(Total MWh received from transmission to Distribution (LV Side) - Total MWh billed)/Total MWh received from transmission to Distribution]	(1) We propose to change the indicator baseline value from 12.0% to 11.5% (2) We propose to add source of data from Power Trading Report and Consolidated Statistical Report	To measure performance within ESCOM's distribution business. The figure includes both technical and non-technical losses in distribution.	New baseline data available from ESCOM Generation Statistics
No	Outcome	Average Frequency of forced outages/interruptions	Ratio	Lost KVA / installed KVA	(1) We propose to change the indicator Rationale or Justification for Measurement to **Temporary proxy measure for measuring the extent of outages. Also a required Key Performance Indicator for reporting to MERA.**	To measure number of outages and frequency. Outage measurements at Tx substations and Gx underestimate the magnitude of outages at the customer level.	DQR Main Report, Vol. II Recommendation, p. 39 The indicator definition is not in line with the international standard of IEEE for measuring reliability i.e. System average interruption frequency index (SAIFI)
No	Outcome	Average Duration of outages/interruptions	Hours	Total duration of faults per month / Number of faults per month	(1) We propose to change the indicator Rationale or Justification for Measurement to **Temporary proxy measure for measuring the duration of outages. Also a required Key Performance Indicator for reporting to MERA.**	To measure duration of outages. Outage measurements at Tx substations and Gx underestimate the magnitude of outages at the customer level.	DQR Main Report, Vol. II Recommendation, p. 40: The definition to measure the average duration of interruptions is not in line with international standard of IEEE for measuring reliability i.e. System average interruption duration index (SAIDI)
No	Outcome	Voltage quality at primary substations - Central Region - Kanengo 132kV	%	Percentage of time within ±10% voltage range at Kanengo 132kV	(1) We propose to change the indicator name to **Voltage quality at select substations - Central Region – Lilongwe A 66kV** (2) We propose to change the indicator definition to **Percentage of time within ±10% voltage range at Lilongwe A 66kV**	To measure quality of supply improvements due to the projects	DQR Main Report, Vol. II Recommendation, p. 42
No	Outcome	Voltage quality at primary substations - Southern Region - Mapanga 66kV	%	Percentage of time within ±10% voltage range at Mapanga 66kV	(1) We propose to change the indicator name to **Voltage quality at select substations - Central Region – Mlangeni 66kV** (2) We propose to change the indicator definition to		DQR Main Report, Vol. II Recommendation, p. 42

ERR linked	Level	Indicator or Result Statement	Unit	Definition	Modification	Original Assumptions & Rationale	Justification for Change
					Percentage of time within ±10% voltage range at Mlangeni 66kV		
No	Output	New 132-kV lines built	km	Km of new 132-kV lines built by Activity	(1) We propose to change the indicator definition to **Sum of km of new 132 kV lines added by activity , energized, tested and commissioned**	Indicative measure of improved transmission capacity before and after Compact	DQR Main Report, Vol. II Recommendation, p. 43
	Output	New 66-kV lines built	km	Km of new 66-kV lines built by Activity	(1) We propose to change the indicator definition to **Sum of km of new 66 kV lines added by activity , energized, tested and commissioned**		DQR Main Report, Vol. II Recommendation, p. 43
No	Output	New 400-kV lines built	km	Km of new 400-kV lines built by Activity	(1) We propose to change the indicator definition to **Sum of km of new 400 kV lines added by activity , energized, tested and commissioned**		DQR Main Report, Vol. II Recommendation, p. 44
No	Output	Transmission Substation Capacity	MVA	Sum of transmission transformer capacity added by compact	(1) We propose to change the indicator name to **New transmission substation capacity added by compact**	To measure transmission substation capacity of the ESCOM Network	DQR Main Report, Vol. II Recommendation, p. 44
No	Output	SCADA Availability Transmission	%	Percentage of Master Station availability	(1) We propose to change the indicator definition to **" percentage of master station, communication and Remote Terminal Unit availability"** (2) We propose to change the indicator baseline and annual targets as indicated in table 3	To measure operational efficiency of ESCOM Network	The original definition did not cover percent availability of RTUs
No	Output	SCADA Coverage Transmission	%	Percent of Transmission Substations with SCADA	(1) We propose to change the indicator definition to **Percent of transmission substations with SCADA in operation**	To measure transmission substation capacity of the ESCOM Network	DQR Main Report, Vol. II Recommendation, p. 44
No	Output	Km of New MCC Distribution Cables	km	Km of new 11-kV cables built by Activity	(1) We propose to change the indicator definition to **Sum of km of new 11 kV cables**	To measure distribution capacity before and after Compact implementation	DQR Main Report, Vol. II Recommendation, p. 45

ERR linked	Level	Indicator or Result Statement	Unit	Definition	Modification	Original Assumptions & Rationale	Justification for Change
					added by activity		
No	Output	Distribution substation capacity	MVA	Sum of distribution transformer capacity added and operational by Compact	(1) We propose to change the indicator name to **New Distribution substation capacity added and energized by Compact**		DQR Main Report, Vol. II Recommendation, p. 45
POWER SECTOR REFORM PROJECT INDICATORS							
No	Outcome	Cost Recovery Ratio	%	Total Revenue / Operating expenses	(1) We propose to change the indicator definition to **Total Revenue/Total Cost,** Where total cost could be further disaggregated for: a) operating expense, b) operating expense plus depreciation and c) Operating expense plus depreciation plus return (weighted average cost of capital (WACC) X rate base).	Effective tariffs measure electricity price per kWh at different theoretical monthly consumption levels. Together with operating expenses covered with revenues, cost recovery ratio reflects utilities' ability to cover expenditures with revenues	DQR Main Report, Vol. II Recommendation, p. 46
No	Outcome	Debt - Equity Ratio	Ratio	Total debt / Total equity	(1) We propose to change the indicator definition to **Total long-term debt / Total Shareholder's equity** (2) We propose to change the indicator baseline value from 17 to 0.20 as indicated in table 3. (3) We propose to change the indicator target to 0.40 as industry standard throughout the compact period	Measure of the indebtedness of ESCOM	Baseline value changed from percentage to ratio DQR Main Report, Vol. II Recommendation, p. 46
No	Outcome	Gearing Ratio	Ratio	Total long-term debt + short-term debt + Bank Overdrafts / Total equity	(1) We propose to add a new indicator (2) We propose to add indicator target of 0.66 as proposed by the Energy Regulator	Measure of the indebtedness of ESCOM	New indicator included to track similar indicators proposed by the Energy Regulator - MERA

ERR linked	Level	Indicator or Result Statement	Unit	Definition	Modification	Original Assumptions & Rationale	Justification for Change
No	Outcome	Acid or Quick Test	Ratio	Current Assets / Current Liabilities, excluding receivables and stocks	(1) We propose changing indicator definition to **"Current Assets, excluding receivables and stocks / Current Liabilities"** (2) We propose to change the indicator baseline value from 1.22 to 0.95 as indicated in table 3.	Measure of the liquidity or financial security of ESCOM.	Baseline value used wrong formula - denominator changed from current liabilities, excluding receivables and stocks to current liabilities Baseline data changed due to revised data from ESCOM Management Accounts
No	Outcome	Average Creditor Days	Days	365 * [(Beginning accounts payables + ending accounts payables) / 2) /Total sales]	(1) We propose to change the indicator definition to **365 * [(Beginning accounts payables + ending accounts payables) / 2) /Total purchases]** Where total purchases = cost of sales + overheads (2) We propose to change the indicator baseline from 55 to 75 as indicated in table 3	Measures how long it takes a company to pay its creditors and indicates company's creditworthiness from a suppliers' perspective. A company slow to pay bills – 100 days or more – and which is slow in collecting receivables may have trouble generating cash or obtaining supplies. Indicator should be evaluated next to average collection period.	DQR Main Report, Vol. II Recommendation, p. 48 Baseline value changed due to new data available from audited accounts
No	Output	ESCOM Maintenance Expenditures plans	Date	Adherence to ESCOM maintenance plans as defined in Annex I.	(1) We propose to delete the indicator	Proxy measure of sustainability of operational investments in ESCOM.	DQR Main Report, Vol. II Recommendation, p. 49: indicator could be removed to avoid duplicity on a similar indicator tracked in the M&E Plan - ESCOM Maintenance Expenditures ratio to planned maintenance budget
No	Output	Transition to Pre-paid metering system	%	Number of customers with pre-paid meters installed / Total number of customers	(1) We propose to change the indicator baseline value from TBD to 36% (2) We propose to change indicator target from TBD to 100%	Indicates progress by ESCOM in transitioning to a pre-paid metering system	New baseline data available from ESCOM Sales Statistics Report
No	Output	Turnaround Facility funded by GOM - USD	USD	Yearly GOM financial contribution required	(1) We propose to change the indicator baseline value from US$2,500 to US$9,120,162	Measure of the liquidity or financial security of ESCOM.	(1) Baseline value in Malawi Kwacha valued at MK2.5 billion was equivalent to US$10 million. (2) Baseline value updated. New value less than US$10 million due to exchange rate gains of the US$
No	Output	Training plans developed and implemented for key managers	Number	Number of managers trained	(1) We propose to change the indicator name to **Training plans developed and implemented for managers** (2) We propose to change the indicator definition to	Key action step required to strengthen and improve internal controls	DQR Main Report, Vol. II Recommendation, p. 49

ERR linked	Level	Indicator or Result Statement	Unit	Definition	Modification	Original Assumptions & Rationale	Justification for Change
					Percentage of total managers trained in a year (3) We propose to change the unit of measure from Number to % (4) We propose to change the data source to Human Resources department		
No	Output	New plans created and adopted by ESCOM Board	Number	Number of new plans created and adopted by ESCOM Board	(1) We propose to change the indicator definition to **Percentage of new plans created and implemented/adopted as per the Integrated Strategic Plan** (2) We propose to change the unit of measure from Number to % (3) We propose to change the data source to Planning and Development division of ESCOM (4) We propose to change the indicator target to 100%	ESCOM yearly strategic plan is expected to include various plans to improve governance and organizational performance	DQR Main Report, Vol. II Recommendation, p. 50
No	Output	Financial Plans updated	Date	ESCOM Financial Plan with agreed upon financial ratios and covenants as defined in Annex I under Compact updated	(1) We propose to change the data source from ESCOM detailed financial model to Financial Plan	Reflects on the liquidity or financial security of ESCOM.	DQR Main Report, Vol. II Recommendation, p. 50
No	Output	ESCOM Public Annual Report and Audited Financial Statements	Number	Number of Annual Reports and Audited Financial Statements published by ESCOM	(1) We propose to change the indicator definition to **Annual reports and audited financial statements published by ESCOM within 120 days after closure of the year**	Means for ensuring that ESCOM finances are transparent and accountable to stakeholders	DQR Main Report, Vol. II Recommendation, p. 50
No	Output	MERA Public Annual Report and Audited Financial Statements	Number	Number of Annual Reports and Audited Financial Statements published by MERA	(1) We propose to change the indicator definition to **Annual reports and audited financial statements published by MERA within 120 days after closure of the year**	Measure to track progress towards ensuring standard public financial disclosure of MERA	DQR Main Report, Vol. II Recommendation, p. 51

ERR linked	Level	Indicator or Result Statement	Unit	Definition	Modification	Original Assumptions & Rationale	Justification for Change
No	Output	Power Market Structure report produced	Date	Restructured power market planning and preparation	(1) We propose to change the indicator source from MERA Reports to Ministry of Energy	Key reforms needed to improve market structure and encourage private investment	DQR Main Report, Vol. II Recommendation, p. 51
No	Output	Energy policy reviewed	Date	Revised Energy Laws to strengthen electricity market	(1) We propose to change the indicator source from MERA Reports to Ministry of Energy	Key reforms needed to improve market structure and encourage private investment	DQR Main Report, Vol. II Recommendation, p. 51
Yes	Output	Cost of service analysis	US$/kWh	Cost of service analysis conducted for ESCOM	(1) We propose to change the indicator name from "cost of service analysis" to "**Cost of Supply**" (2) We propose to change the indicator definition to "**Average tariff charged by ESCOM to cover revenue requirements and cost of supply**"	Determines the cost of supplying electricity service and informs adjustments to tariffs to ensure cost-recovery	Initial indicator name and definition is not SMART and indicator measure and analysis is different from indicator name.
No	Output	Tariff Levels and Schedules	US$/kWh	Tariff Levels and Schedule adhered to throughout the Compact	(1) We propose to change the indicator definition to "**Approved Tariff Levels and Schedules by MERA adhered to throughout the Compact**"	Measures ability to revise tariffs and adjust tariff schemes in order to cover costs with revenues.	Initial indicator name and definition is not SMART and indicator measure and analysis is different from indicator name.
No	Output	Tariff indexation framework implemented on time	Ratio	Refinement of legal basis for tariff indexation framework adopted and implemented, as defined in Annex I	(1) We propose to change the indicator definition to **Cost of supply / approved tariff levels and schedules**	Measures ability to revise tariffs and adjust tariff schemes in order to cover costs with revenues.	DQR Main Report, Vol. II Recommendation, p. 51
No	Output	Tariff design efficiency that includes a Lifeline Tariff developed	Number	Lifeline tariff included in tariff application that protects the poor	(1) We propose to change the indicator definition to **Tariff design efficiency that includes a Lifeline Tariff or other mechanisms developed for promoting access for low income customers** (2) We propose to change the indicator unit from 'number' to 'Yes/No'	Key reforms needed to improve market structure and encourage private investment	DQR Main Report, Vol. II Recommendation, p. 51
ENVIRONMENT AND NATURAL RESOURCES PROJECT INDICATORS							

ERR linked	Level	Indicator or Result Statement	Unit	Definition	Modification	Original Assumptions & Rationale	Justification for Change
No	Outcome	Electricity not generated due to weeds and sedimentation	MWh	Sum [MWh unavailable from HPP due to weed and sedimentation faults]	(1) We propose to change the indicator definition to **Sum [Recorded output (MW) for each HPP just before outage X Outage duration (h)]** (2) We propose to change the indicator baseline value from TBD to 4,640	To measure outages due to ENRM problems, and thus performance of WSM project	New baseline data available from ENRM statistics from ESCOM DQR Main Report, Vol. II Recommendation, p. 52
No	Outcome	Electricity not generated due to weeds and sedimentation - Nkula	MWh	Sum [MWh unavailable from HPP due to weed and sedimentation faults] - Nkula	(1) We propose to change the indicator definition to **Recorded output (MW) at Nkula just before outage X Outage duration (h)** (2) We propose to change the indicator baseline value from TBD to 3,129		
No	Outcome	Electricity not generated due to weeds and sedimentation - Tedzani	MWh	Sum [MWh unavailable from HPP due to weed and sedimentation faults] - Tedzani	(1) We propose to change the indicator definition to **Recorded output (MW) at Tedzani just before outage X Outage duration (h)** (2) We propose to change the indicator baseline value from TBD to 562		
No	Outcome	Electricity not generated due to weeds and sedimentation - Kapichira	MWh	Sum [MWh unavailable from HPP due to weed and sedimentation faults] - Kapichira	(1) We propose to change the indicator definition to **Recorded output (MW) at Kapichira just before outage X Outage duration (h)** (2) We propose to change the indicator baseline value from TBD to 949		
No	Outcome	Distribution of invasive aquatic species	km^2	Area (Km^2) of weeds in upper and middle Shire River basin as observed in geographic information system maps	(1) We propose to change the frequency of reporting to biannual (2) We propose to change the disaggregation to location (upper and middle Shire River)	Measure of the root causes or underlying environmental conditions which are causing electricity outages in generation	DQR Main Report, Vol. II Recommendation, p. 52

ERR linked	Level	Indicator or Result Statement	Unit	Definition	Modification	Original Assumptions & Rationale	Justification for Change
				and field observations			
No	Outcome	Water turbidity	TSS	Total suspended solids using standard methodology	(1) We propose to change the indicator definition to **{(Dry weight of residue and filter - Dry weight of filter alone, in gm)/ mL of sample} X 1,000,000** (2) We propose to change the unit of measure to mg/L (3) We propose to change the disaggregation to power plant (4) We propose to change the frequency of reporting to biannual – October/November and June/July	To measure effectiveness of ENRM activities in Upper Shire River	DQR Main Report, Vol. II Recommendation, p. 52
No	Output	ESCOM expenses on aquatic weed management	USD	Total US$ expended by ESCOM per year on aquatic weed control, including staff, equipment and fuel	(1) We propose to change the indicator name to **Average weed management expenses per ton of weed harvested** (2) We propose to change the indicator definition to **Amount spent on weed management/Tons of weed harvested**	To measure outages due to ENRM problems, and thus performance of WSM project	DQR Main Report, Vol. II Recommendation, p. 53
No	Output	Amount of weed harvested at Liwonde barrage	Metric Tonnes (million)	Average weight in metric tons of weed harvested at Liwonde barrage per year	(1) We propose to change the unit value from **"Metric Tons (million)" to "Metric Tons"** (2) We propose to change the indicator baseline value from 13.4 to 2,561.33 (3) We propose to change the year 5 target from 20.04 Million Metric Tons to TBD	To measure outages due to ENRM problems, and thus performance of WSM project	New baseline data available from ESCOM ENRM Statistics The original data of 13.4 million metric tonnes was based on Consultant's estimates which were misrepresented from their report (ICF/CORE Report FFS_Annex_06_Weed_Management_Assessment_Report, January 18, 2011) Exhibit 3: Metric Tons of Plants harvested through time at Liwonde Barrage, p. 7 ESCOM has also not set a target on how much weed should be harvested in a year.

ERR linked	Level	Indicator or Result Statement	Unit	Definition	Modification	Original Assumptions & Rationale	Justification for Change
No	Output	ESCOM expenses on sediment management	USD	Total USD expended by ESCOM per year on sediment management, including staff, equipment and fuel	(1) We propose to change the indicator name to **Average sediment management expenses per ton of sediment harvested** (2) We propose to change the indicator definition to **Amount spent on sediment management/Tons of sediment removed**	To measure outages due to ENRM problems, and thus performance of WSM project	DQR Main Report, Vol. II Recommendation, p. 53
No	Output	Percentage of head pond available	%	Actual Head pond volume for HEP / Original head pond volume for HEP	(1) We propose to change the frequency of reporting from Quarterly to Bi-Annual	To measure outages due to ENRM problems, and thus performance of WSM project	DQR Main Report, Vol. II Recommendation, p. 53 To capture data before and after rainy season
No	Output	Bio control inoculations	Number	Number of bio control inoculations conducted	(1) We propose to change the indicator name to **Number of feeding scars on sampled water hyacinth colonies** (2) We propose to change the indicator definition to **Number of signs of plant damage on sampled colonies** (3) We propose we change the frequency of reporting from quarterly to Bi-Annual	To measure the effectiveness of bio-control measures on water hyacinths control	DQR Main Report, Vol. II Recommendation, p. 54
No	Output	Community members engaged in ongoing community level dialogues	Number	Number of community members participating in community-level dialogues or initiatives	(1) We propose we change the frequency of reporting from quarterly to Bi-Annual	Represents equitable participation of women in community level decision-making	DQR Main Report, Vol. II Recommendation, p. 55
No	Output	Leaders trained on social/gender/natural resource management issues	Number	Number of women and men trained in management of natural resources	(1) We propose we change the frequency of reporting from quarterly to Bi-Annual	Measures attainment among women of knowledge and skills to effectively engage in sustainable land management	DQR Main Report, Vol. II Recommendation, p. 56
No	Output	Women and men attending functional literacy programs	Number	Number of women and men who complete a functional literacy program	(1) We propose dropping this indicator	Indicates number of women equipped to effectively serve in leadership positions within the community	SGEF grants will not include funding for functional literacy programs

ERR linked	Level	Indicator or Result Statement	Unit	Definition	Modification	Original Assumptions & Rationale	Justification for Change
No	Output	Women enrolled in leadership training	Number	Number of women who enrol and complete leadership training	(1) We propose to change indicator name to **Women provided with leadership training** (2) We propose we change the frequency of reporting from quarterly to Bi-Annual	Indicates equitable representation of women on community-level decision-making bodies	DQR Main Report, Vol. II Recommendation, p. 56
No	Output	Women members of community/village level committees	Number	Number of women who serve as members on community or village-level committees	(1) We propose we change the frequency of reporting from quarterly to Bi-Annual	Indicates equitable representation of women on community-level decision-making bodies	DQR Main Report, Vol. II Recommendation, p. 57

Table 3: Proposed Changes in Baselines and Targets

			Baseline			2014			2015			2016			2017			2018		
ERR Linked	Indicator Level	Indicator	Old	New	%Deviation	Old	New	%Deviation	Old	New	%Deviation	Old	New	%Deviation	Old	New	%Deviation	Old	New	%Deviation
Semi-Annual Review Indicators																				
No	Medium Term Outcome	Average Cost of Electricity Billed	0.02	0.07	226.8%	0.01	TBD	N/A	0.02	TBD	N/A	0.04	TBD	N/A	0.04	TBD	N/A	0.05	TBD	N/A
No	Medium Term Outcome	Average Collection Period in days	55	54	-1.5%	60	60	0.0%	60	45	-25.0%	60	45	-25.0%	60	45	-25.0%	60	45	-25.0%
Yes	Medium Term Outcome	Total electricity consumed	1,429,680	1,406,549	-1.6%	1,520,896	1,520,896	0.0%	1,687,937	1,687,937	0.0%	1,741,138	1,741,138	0.0%	1,920,844	1,920,844	0.0%	2,186,861	2,186,861	0.0%
No	Medium Term Outcome	Total Electricity Consumed - Residential Customers	577,649	575,351	-0.4%	619,005	619,005	0.0%	686,991	686,991	0.0%	708,643	708,643	0.0%	781,783	781,783	0.0%	890,053	890,053	0.0%
No	Medium Term Outcome	Total Electricity Consumed - Residential Customers-Northern	TBD	47,804	N/A	TBD	51,432	N/A	TBD	57,080	N/A	TBD	58,879	N/A	TBD	64,956	N/A	TBD	73,952	N/A
No	Medium Term Outcome	Total Electricity Consumed - Residential Customers-Central	TBD	223,960	N/A	TBD	240,953	N/A	TBD	267,417	N/A	TBD	275,845	N/A	TBD	304,316	N/A	TBD	346,461	N/A
No	Medium Term Outcome	Total Electricity Consumed - Residential Customers-Southern	TBD	303,586	N/A	TBD	326,620	N/A	TBD	362,493	N/A	TBD	373,918	N/A	TBD	412,511	N/A	TBD	469,640	N/A
Yes	Medium Term Outcome	Total Energy Consumption - Commercial Customers	214,957	214,691	-0.1%	273,761	273,761	0.0%	303,829	303,829	0.0%	313,405	313,405	0.0%	345,752	345,752	0.0%	393,635	393,635	0.0%
No	Medium Term Outcome	Total Energy Consumption - Commercial Customers-Northern	TBD	23,883	N/A	TBD	30,454	N/A	TBD	33,799	N/A	TBD	34,864	N/A	TBD	38,463	N/A	TBD	43,790	N/A

			Baseline			2014			2015			2016			2017			2018		
ERR Linked	**Indicator Level**	**Indicator**	**Old**	**New**	**%Deviation**	**Old**	**New**	**%Deviation**	**Old**	**New**	**%Deviation**	**Old**	**New**	**%Deviation**	**Old**	**New**	**%Deviation**	**Old**	**New**	**%Deviation**
No	Medium Term Outcome	Total Energy Consumption - Commercial Customers - Central	TBD	86,968	N/A	TBD	110,897	N/A	TBD	123,077	N/A	TBD	126,956	N/A	TBD	140,059	N/A	TBD	159,456	N/A
No	Medium Term Outcome	Total Energy Consumption - Commercial Customers - Southern	TBD	103,839	N/A	TBD	132,410	N/A	TBD	146,953	N/A	TBD	151,584	N/A	TBD	167,230	N/A	TBD	190,389	N/A
Yes	Medium Term Outcome	Total Energy Consumption - Industrial Customers	637,074	616,506	-3.2%	628,130	628,130	0.0%	697,118	697,118	0.0%	719,090	719,090	0.0%	793,308	793,308	0.0%	903,174	903,174	0.0%
No	Medium Term Outcome	Total Energy Consumption - Industrial Customers - Northern	TBD	29,748	N/A	TBD	30,308	N/A	TBD	33,637	N/A	TBD	34,697	N/A	TBD	38,279	N/A	TBD	43,580	N/A
No	Medium Term Outcome	Total Energy Consumption - Industrial Customers - Central	TBD	149,059	N/A	TBD	151,869	N/A	TBD	168,549	N/A	TBD	173,861	N/A	TBD	191,806	N/A	TBD	218,369	N/A
No	Medium Term Outcome	Total Energy Consumption - Industrial Customers - Southern	TBD	437,700	N/A	TBD	445,953	N/A	TBD	494,932	N/A	TBD	510,531	N/A	TBD	563,224	N/A	TBD	641,225	N/A
Yes	Outcome	Total system losses (Technical and Non-Technical)	21.8	22.0	0.9%	21.0	21.0	0.0%	21.0	21.0	0.0%	21.0	21.0	0.0%	21.0	21.0	0.0%	19.8	19.8	-0.3%
General Indicators																				
Compact Wide Indicators																				
No	Goal	Annual real GDP growth rate	5.4	5.0	-8.0%															
No	Goal	Annual real per capita income	254	145	-42.9%															
Intermediate Outcome Indicators																				
Yes	Intermediate Outcome	Customers connected to the grid	TBD	235,469	N/A	TBD	-	N/A	TBD	-	N/A	TBD	-	N/A	TBD	-	N/A	TBD	-	N/A
Yes	Intermediate Outcome	Residential Customers connected to the grid	TBD	204,524	N/A	TBD	213,225	N/A	TBD	214,291	N/A	TBD	215,363	N/A	TBD	216,439	N/A	TBD	217,522	N/A
Yes	Intermediate Outcome	Commercial Customers connected to the grid	TBD	30,137	N/A	TBD	36,645	N/A	TBD	36,828	N/A	TBD	37,012	N/A	TBD	37,197	N/A	TBD	37,383	N/A
Yes	Intermediate Outcome	Industrial Customers connected to the grid	TBD	808	N/A	TBD	760	N/A	TBD	764	N/A	TBD	768	N/A	TBD	771	N/A	TBD	775	N/A
Yes	Intermediate Outcome	Percent Plant availability of HEP		90	N/A															
Yes	Intermediate Outcome	Percent availability of HEP - Nkula A	85	92	8.0%															
Yes	Intermediate Outcome	Percent availability of HEP - Nkula B	64	86	33.7%															
Yes	Intermediate Outcome	Percent availability of HEP - Tedzani I & II	96	98	1.8%															
Yes	Intermediate Outcome	Percent availability of HEP - Tedzani III	68	99	46.3%															

			Baseline			2014			2015			2016			2017			2018		
ERR Linked	**Indicator Level**	**Indicator**	**Old**	**New**	**%Deviation**	**Old**	**New**	**%Deviation**	**Old**	**New**	**%Deviation**	**Old**	**New**	**%Deviation**	**Old**	**New**	**%Deviation**	**Old**	**New**	**%Deviation**
Yes	Intermediate Outcome	Percent availability of HEP - Kapichira I	75	97	29.5%															
Yes	Intermediate Outcome	Percent availability of HEP - Kapichira II	-	-	N/A															
No	Intermediate Outcome	Percent utilization of HEP		78	N/A															
No	Intermediate Outcome	Percent utilization of HEP - Nkula A	87	85	-2.3%															
No	Intermediate Outcome	Percent utilization of HEP - Nkula B	73	64	-12.3%															
No	Intermediate Outcome	Percent utilization of HEP - Tedzani I & II	95	96	1.1%															
No	Intermediate Outcome	Percent utilization of HEP - Tedzani III	73	68	-7.1%															
No	Intermediate Outcome	Percent utilization of HEP - Kapichira I	73	75	3.0%															
No	Intermediate Outcome	Percent utilization of HEP - Kapichira II	-	-	N/A															
Outcome Level Indicators																				
Infrastructure Development Project Indicators																				
No	Outcome	Transmission System losses (Technical)	9.8	10.5	7.1%	9.0	9.0	0.0%	9.0	9.0	0.0%	9.0	9.0	0.0%	9.0	9.0	0.0%	8.8	8.8	-0.6%
No	Outcome	Distribution System losses (Technical & Non-Technical)	12.0	11.5	-4.1%	12.0	12.0	0.0%	12.0	12.0	0.0%	12.0	12.0	0.0%	12.0	12.0	0.0%	11.0	11.0	0.0%
Power Sector Reform Project Indicators																				
No	Outcome	Debt - Equity Ratio	17	0.20	20.8%	18	0.40	118.5%	15	0.40	174.5%	13	0.40	200.8%	13	0.40	201.7%	9	0.40	370.6%
No	Outcome	Acid or Quick Test	1.22	0.95	-22.3%	1.00	1.00	0.0%	1	1.00	0.0%	1.00	1.00	0.0%	1.00	1.00	0.0%	1.00	1.00	0.0%
No	Outcome	Average Creditor Days	55	75	35.6%	45		-100.0%	45	30	-33.3%	45	30	-33.3%	45	30	-33.3%	45	30	-33.3%
Environment and Natural Resources Project Indicators																				
No	Outcome	Electricity not generated due to weeds and sedimentation		4,640	N/A															
No	Outcome	Electricity not generated due to weeds and sedimentation - Nkula	-	3,129	N/A															
No	Outcome	Electricity not generated due to weeds and sedimentation - Tedzani	-	562	N/A															
No	Outcome	Electricity not generated due to weeds and sedimentation - Kapichira	-	949	N/A															

			Baseline			2014			2015			2016			2017			2018		
ERR Linked	**Indicator Level**	**Indicator**	**Old**	**New**	**%Deviation**	**Old**	**New**	**%Deviation**	**Old**	**New**	**%Deviation**	**Old**	**New**	**%Deviation**	**Old**	**New**	**%Deviation**	**Old**	**New**	**%Deviation**
Output Level Indicators																				
Infrastructure Development Project Indicators																				
No	Output	SCADA Availability Transmission	-	98	N/A	-	95	N/A	-	95	N/A	-	95	N/A	-	95	N/A	95	95	0.0%
Power Sector Reform Project Indicators																				
Power Sector Reform Project - ESCOM Turnaround Activity																				
No	Output	Transition to Pre-paid metering system	TBD	36	N/A	TBD	50	N/A	TBD	100	N/A	TBD	100	N/A	TBD	100	N/A	TBD	100	N/A
No	Output	Turnaround Facility funded by GOM - USD	2,500	10,000,000	399900.0%															
Power Sector Reform Project - Regulatory Strengthening Activity																				
No	Output	Actual Tariff Levels and Schedules	0.08	0.08	-0.9%	0.12	0.10	-16.0%	0.12	0.12	-2.6%	0.12	0.12	4.0%	0.12	0.13	5.4%	0.12	0.13	5.4%
No	Output	Approved Tariff Levels and Schedules	0.08	0.06	-25.0%	0.12	0.10	-16.0%	0.12	0.12	-2.6%	0.12	0.12	4.0%	0.12	0.13	5.4%	0.12	0.13	5.4%
Environment and Natural Resources Project Indicators																				
No	Output	ESCOM expenses on aquatic weed management	TBD	259,497	N/A															
No	Output	Amount of weed harvested at Liwonde barrage	13,400,000	2,561	-100.0%															
No	Output	ESCOM expenses on sediment management	TBD	71,028	N/A															

GOVERNMENT OF MALAWI

Monitoring and Evaluation

Second Monitoring and Evaluation Plan Modifications Memo

Monitoring, Evaluation and Economics Department

Millennium Challenge Account – Malawi

P. O. Box 31513

Lilongwe

Malawi

September 2017

1. MCA-MALAWI M&E PLAN MODIFICATIONS

The MCA-Malawi M&E Plan was approved by MCA-Malawi Board of Trustees and MCC on September 13, 2013 and September 19, 2013 respectively. The M&E Plan documents the key performance indicators that will be used to measure progress on implementation of Compact interventions as well as evaluation criteria.

The first modification to the M&E Plan was done during the period March-June 2015 and was approved by MCA-Malawi Board and MCC in September 2015. This was based on modifications to a number of indicators that were proposed by CRISIL Risk and Infrastructure Solutions Limited (CRIS), Consultants engaged by MCA-Malawi to carry out a comprehensive data quality review assignment for a period of six months – September 2013 to March 2014. The objective of the assignment was to ensure that the data collected and reported for the Compact program by project partners is accurate and of high quality.

To ensure accurate and quality data being reported, the M&E Plan recommended for Data Quality Audits (DQAs) to be conducted throughout the compact implementation period. The Contract that was signed with CRISIL in August 2013 also outlined the need to conduct, apart from a base period comprehensive data quality review, annual DQAs in order to ensure that good quality data is being used to calculate key performance indicators. In December 2014, MCA-Malawi engaged CRISIL Risk and Infrastructure Solutions Limited (CRIS), to conduct annual Data Quality Audits (DQAs) through the years 2015 to 2018. The DQAs aim to evaluate the reliability, validity and accuracy of data reported to MCC, MCA-Malawi, Government of Malawi and other stakeholders in order to improve the quality of data gathering and report efforts.

The purpose of this memo, therefore, is to document all the changes to the agreed Compact indicators that have occurred between the period when the first modification to M&E Plan was approved in September 2015 and finalization of the second Data Quality Audit in June 2016. These changes include the following:

A. Policy and Structural Changes

1. No changes will be effected

B. Results Statements and Compact Benefits.

1. No changes will be effected.

C. Indicators and Targets

1. Modifications to indicator names and definitions including common power indicators.
2. Modifications to baseline values due to revised data.
3. Modifications to target values due to revised data.
4. Modifications to historical values due to revised data.
5. New indicators based on the ENRM_SGEF grants.

Table 1: Compact Goal and Objective Level Indicator Changes

Program:	**Compact Goal and Objective Level Indicators**
Activity:	**N/A**
Sub-Activity:	**N/A**
Manufacturing and industry output growth rate	
Change Description:	Retire indicator
Change	Retire indicator from both the ITT and the M&E Plan
Justification:	Cost of data collection for indicator outweighs usefulness
Justification Description:	This is not tied to the ERR or any key outcomes under the Compact, and it is not possible to project an End-of-Compact target.
Business sales losses due to power interruptions and quality	
Change Description:	Retire indicator
Change	Retire indicator from both the ITT and the M&E Plan
Justification:	Cost of data collection for indicator outweighs usefulness
Justification Description:	During the baseline Enterprise survey it was difficult to source data on this due to difficulty in obtaining financial data from many firms
Back-up diesel generation for firms	
Change Description:	Retire indicator

Program:	**Compact Goal and Objective Level Indicators**
Activity:	**N/A**
Sub-Activity:	**N/A**
Change	Retire indicator from both the ITT and the M&E Plan
Justification:	Cost of data collection for indicator outweighs usefulness
Justification Description:	No baseline data for this indicator and Unlikely to obtain data for this indicator
Customers connected to the grid	
Change	Add yearly targets for the aggregate indicator
Change Description:	Add yearly targets for the aggregate as follows: 2014 (250,630), 2015 (251,883), 2016 (253,143), 2017 (254,407), 2018 (255,684)
Justification:	TBD replaced with target
Percentage of households connected to the national grid	
Change Description:	New Indicator: Add Power Common Indicator P-25 and baselines
Change	Addition of a new Objective-level outcome indicator defined as "**Number of households that have access to a legal connection to electricity service from an electrical utility or service provider / Total number of households in the country**" Include baseline figures as follows: Overall (7.1%), Urban (33%) Rural (2.4%), Male (7.8%) and Female (5%)
Justification:	MCC requires new common indicator

Program:	**Compact Goal and Objective Level Indicators**					
Activity:	**N/A**					
Sub-Activity:	**N/A**					
Justification Description:	This should allow for aggregation and comparison across compacts					
Disaggregation	Gender and Location					
Percent availability of hydroelectric power plants						
Change Description:	Change Indicator name, definition, primary source, responsible party, add target values for year 5 and classification.					
Name Change	**Change name from Percent availability of hydroelectric power plants to Power plant availability** which is Common Indicator P-16 calculated as a percentage **Revised Definition:** Unweighted average across all power plants of the following: total number of hours per month that a plant is able and available to produce electricity / Total number of hours in the same month. **Change classification:** from Objective level outcome indicator to ENRM outcome indicator **Change reporting frequency:** from Annual to quarterly **Change Primary Source** to EGENCO Performance Monitoring Reports **Change Responsible Party** to EGENCO **Add annual targets** for KPI and the disaggregates for the period 2014-2018 as stated below;					
	Power Plant availability	**2014**	**2015**	**2016**	**2017**	**2018**
	Previous target	Blank	Blank	Blank	Blank	Blank
	Revised Targets	78%	69%	71%	78%	89%
	Previous Target (Nkula A)	Blank	Blank	Blank	Blank	Blank
	Revised Target	77%	53%	57%	62%	95%
	Previous Target (Nkula B)	Blank	Blank	Blank	Blank	Blank

Program:	**Compact Goal and Objective Level Indicators**					
Activity:	**N/A**					
Sub-Activity:	**N/A**					
	Revised target	73%	77%	82%	86%	90%
	Previous Target (Tedzani I & II)	Blank	Blank	Blank	Blank	Blank
	Revised Target	73%	74%	74%	75%	75%
	Previous Target (Tedzani III)	Blank	Blank	Blank	Blank	Blank
	Revised Target	95%	95%	95%	95%	95%
	Previous Target (Kapichira I)	Blank	Blank	Blank	Blank	Blank
	Revised Target	73%	76%	79%	82%	85%
	Previous Target (Kapichira II)	Blank	Blank	Blank	Blank	Blank
	Revised Target	0	38	38	67	95
Justification:	MCC requires new common indicator TBD replaced with targets					
Justification Description:	Annual targets estimated in the approved MCC Malawi ERR v14 of 2014					
Justification Description:	Should allow for comparison/aggregation across Compacts.					
Percent Utilization of HEP						
Change Description:	Change primary source, responsible party and include, target Modification as estimated in the approved MCC Malawi ERR 2014 calculations; and include actuals Change reporting frequency in Annex I from monthly to quarterly					
Change	**Change Primary Source** to EGENCO Performance Monitoring Reports **Change Responsible Party** to EGENCO					
	% utilization of HEP	**2014**	**2015**	**2016**	**2017**	**2018**

Program:	**Compact Goal and Objective Level Indicators**					
Activity:	**N/A**					
Sub-Activity:	**N/A**					
	Previous targets	Blank	Blank	Blank	Blank	Blank
	Revised Targets	90%	90%	90%	90%	90%
	Actual	67.40%				
	Nkula A-Previous Target					Blank
	Nkula A-Revised Target					95
	Nkula B-Previous Target					Blank
	Nkula B-Revised Target					90
	Tedzani I & II-Previous Target					Blank
	Tedzani I & II - Revised Target					95
	Tedzani III-Previous Target					Blank
	Tedzani III - Revised Target					75
	Kapichira I-Previous Target					Blank
	Kapichira I - Revised Target					85
	Kapichira II-Previous Target					Blank

Program:	**Compact Goal and Objective Level Indicators**					
Activity:	**N/A**					
Sub-Activity:	**N/A**					
	Kapichira II- Revised Target					95
	Previous Values (Nkula A)	Blank	Blank	Blank		
	Revised Values (Nkula A)	86	64	79		
	Previous Values (Nkula B)	Blank	Blank	Blank		
	Actual (Nkula B)	68	61	58		
	Previous Values (Tedzani I & II)	Blank	Blank	Blank		
	Revised Values (Tedzani I & II)	98	94	84		
	Previous Values (Tedzani III)	Blank	Blank	Blank		
	Revised Values (Tedzani III)	60	67	54		
	Previous Values (Kapichira I)	Blank	Blank	Blank		
	Actual (Kapichira I)	68	61	69		
	Previous Values (Kapichira II)	Blank	Blank	Blank		
	Actual (Kapichira II)	32	53	60		
Justification:	TBD replaced with target					

Program:	**Compact Goal and Objective Level Indicators**					
Activity:	**N/A**					
Sub-Activity:	**N/A**					
Justification Description:	Annual targets estimated in the approved MCC Malawi ERR v14 of 2014 and actual values recalculated in latest version of ITT (Q15). Primary and Responsible sources changed due the unbundling of ESCOM which led to the creation of EGENCO					
Total electricity Supply (MWh)						
Change Description:	Modify name, Unit of measurement and definition to align with Power Common Indicator P-15, Change primary source and responsible party updating of actuals					
Change	Revise name from "Total Generation" to "Total electricity supply" defined as "Total electricity, in megawatt hours, produced or imported in a year." Change unit of measurement from GWh to MWh and revise baseline value and targets by multiplying by 1,000 **Change Primary Source** to EGENCO Performance Monitoring Reports **Change Responsible Party** to EGENCO					
	Total electricity supply (MWh)	**2014**	**2015**	**2016**	**2017**	**2018**
	Previous		**1,975**	**1,972**		
	Revised Actual	1,906,448	1,975,025	1,976,366		
	Actual (Nkula A)	180,245	133,505	166,770		
	Actual (Nkula B)	594,050	534,387	505,064		
	Actual (Tedzani I & II)	343,242	330,199	294,779		
	Actual (Tedzani III)	276,046	311,448	249,854		
	Kapichira I	385,419	345,333	394,110		
	Kapichira II	106,182	298,904	340,706		
	Wovwe	21,265	21,249	25,084		

<table>
<tr><td>Program:</td><td colspan="6">Compact Goal and Objective Level Indicators</td></tr>
<tr><td>Activity:</td><td colspan="6">N/A</td></tr>
<tr><td>Sub-Activity:</td><td colspan="6">N/A</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Justification:</td><td colspan="6">MCC requires new common indicator
Corrections to erroneous data</td></tr>
<tr><td>Justification Description:</td><td colspan="6">Should allow for comparison/aggregation across Compacts
Actuals revised from GWh to MWh
Actuals updated based on data quality audit revisions</td></tr>
<tr><td colspan="7">Total electricity Sold (MWh)</td></tr>
<tr><td>Change Description:</td><td colspan="6">Modify name and definition to align with Power Common Indicator P-23 and
Re-computation yearly actuals</td></tr>
<tr><td rowspan="3">Change</td><td colspan="6">Revise name from Total Electricity Consumed to “Total electricity sold”
Revise definition from “Total MWh sales in all regions” to “The total megawatt hours of electricity sales to all customer types.”</td></tr>
<tr><td>Total electricity consumed (MWh)</td><td>2014</td><td>2015</td><td>2016</td><td>2017</td><td>2018</td></tr>
<tr><td>Actual</td><td>1,436,768</td><td>1,490,404</td><td>1,542,610</td><td></td><td></td></tr>
<tr><td>Justification:</td><td colspan="6">MCC requires new common indicator
Corrections to erroneous data</td></tr>
<tr><td>Justification Description:</td><td colspan="6">Error in computation observed during second DQA (Margin of error -1.51%)
Previous 2015 value: 1,467,866 (revised higher)
Previous 2016 value: 1,527,565 (revised higher)

The total electricity consumption for the northern region – industrial consumers did not include the industrial consumption pertaining to ‘Scale III Maximum Demand Low Voltage Time of Use’ consumption category for all months, whereas it was included for southern and central region industrial customers.</td></tr>
</table>

Program:	**Compact Goal and Objective Level Indicators**
Activity:	**N/A**
Sub-Activity:	**N/A**
Installed generation capacity (MW)	
Change Description:	New Indicator: Add Power Common Indicator P-17, defined as "Total generation capacity, in megawatts, installed plants can generate within the country." Add baseline of 287 MW
Level	Outcome Indicator
Classification	Level
Disaggregation:	(A) On-grid/Off-grid
Justification:	MCC requires new common indicator
Justification Description	The objective of measuring generation capacity is to gauge progress on expansion of the overall power sector, which depends on a variety of factors that may be addressed by MCC investments in both power infrastructure and institutional reform, such as improvements in regulatory independence and effectiveness and the execution of a credible sector expansion plan.
Share of renewable energy in the country	
Change Description:	New Indicator: Add Power Common Indicator P-26 defined as "Total installed generation capacity of on- or off-grid renewable energy, in megawatts / Total installed generation capacity" Add 100% as the base line value
Level:	Outcome
Classification:	Level
Disaggregation:	None
Justification	MCC requires new common indicator
Justification Description:	The objective of this indicator is to track progress on- or off-grid sources of electricity generation derived from naturally replenished resources including such as wind, hydropower, solar energy, biomass, or biofuel.

Program:	**Compact Goal and Objective Level Indicators**
Activity:	**N/A**
Sub-Activity:	**N/A**
Investment in power sub-sector – total USD million committed by financial close	
Change Description:	Indicator Classification Modification
Change	Change indicator classification from Level to Cumulative.
Justification:	Cumulative data more useful than information in levels.
Justification Description:	It is important to capture how investments are increasing over time hence capturing them as cumulative
Investment in Power Sub-Sector – MW of investment in Generation	
Change Description:	Indicator Classification Modification (Source: DQA Report, June 2016) and definition modification
Change	Change indicator classification from Level to Cumulative Change indicator definition from "Total MW of investment in Generation capacity completed and energized by public and private sector entities" to "Total MW of investment in Generation capacity committed by outside parties by financial close"
Justification:	Program, Project or Activity scope change.
Justification Description:	The length of time to commission and energise an additional power plant takes time whereas financial close would also entail a legally agreed plan to increase investment in generation capacity.

Table 2: Infrastructure Development Project Indicators

Project:	**Infrastructure Development Project (IDP)**								
Sub-Activity:	**N/A**								
Transmission system technical losses									
Change Description:	Modify indicator name and definition to align with Power Common Indicator P-18								
Change	Change indicator name from "Transmission System Losses (Technical)" to "Transmission system technical losses" Change indicator definition from "{(Total MWh received by transmission from generation – (Total MWh sent from transmission to distribution substation + Total MWh sent from transmission to dedicated feeders supplying transmission industrial customers)) / (Total MWh received by transmission from generation}" to "1- [Total megawatt hours transmitted out from transmission substations / Total megawatt hours received from generation to transmission substations]" Change the indicator to be stand alone and not a disaggregate of Total System losses								
Justification:	MCC requires new common indicator								
Justification Description	To align with Power Common indicators.								
Distribution system losses – Technical and Non-technical (%)									
Change Description:	Change the indicator to be stand alone and not a disaggregate of Total System losses Re-computation of historical indicator Values for year 2 and quarterly values (Source: DQA Report, June 2016)								
Change (1)	**Compact year 2**	**July-Sep 14**	**Oct-Dec 14**	**Jan-Mar 15**	**Apr-Jun 15**	**Jul-Sep 15**	**Oct-Dec 15**	**Jan-Mar 16**	**Apr-Jun 16**
Previous	17.03	17.50	16.40	17.20	20.60	18.30	16.00	18.30	11.30
Revised	18.99	18.55	17.26	18.15	21.86	19.00	16.90	19.20	11.80
Justification:	Corrections to erroneous data								
Justification Description:	-An error was observed in the formula applied to calculate the indicator. The 'total energy input' is considered in the denominator instead of 'total energy received from transmission to distribution'.								
Change (2)	Definition modification: Modify definition to align with Power Common Indicator P-19.								

Project:	**Infrastructure Development Project (IDP)**						
Sub-Activity:	**N/A**						
New definition:	Change from [(Total kWh received from transmission to distribution - total kWh billed) / (total kWh received from transmission to distribution)] to 1-[Total megawatt hours billed / Total megawatt hours received from transmission]						
Justification:	MCC requires new common indicator						
Average frequency of forced outages/interruptions (ratio)							
Change Description:	Re-computation of historical indicator Value for year 2 and quarterly values (Source: DQA Report, June 2016)						
Change	**Compact Year 2**		**Apr-Jun 15**		**Jul-Sept 15**		
Previous	1.08		1.08		0.58		
Revised	0.63		0.63		2.03		
Justification:	Corrections to erroneous data						
Justification Description:	Error in computation observed during second DQA (Margin of Error -41.7%) for compact year 2; and updated ESCOM data for Jul-Sept 15.An error is observed in the application of formula while calculating the indicator value for Quarter 4. The data pertaining to Quarter 1 is used instead of Quarter 4. However, this error has not affected the yearly value. As the yearly value is computed considering raw data for the annual period.						
Average duration of outages/interruptions							
Change Description:	Baseline modification Change indicator baseline and historical figures as stated below (Source: DQA Report, June 2016)						
	Baseline	**Oct-Dec 13**	**Jan-Mar 14**	**Apr-Jun 14**	**Jul-Sept 14**	**Oct-Dec 14**	**Jan-Mar 15**
Previous	3.48	5.8	13.92	10.07	9.3	11.4	12.7
Revised	3.65	1.67	4.61	3.38	3.11	3.87	4.33
Justification:	Baseline change Corrections to erroneous data						
Justification Description:	Instead of calculating the average duration, MCA-Malawi used summation to find quarterly value in line with MERA KPIs calculation. However CRISIL the DQA Consultant, CRISL, noted that this is supposed to be an average for the quarter and not total sum						

Project:	**Infrastructure Development Project (IDP)**
Sub-Activity:	**N/A**
Total System Load Shed	
Change Description:	Change the indicator name to from Total system MWh shed to "**Total System Load Shed"**
Justification:	MCC requires new common indicator
Indicator Justification	This is included as part of the "list of reference indicators for Power Sector Compacts" in the Common Indicator Guidance
Total Energy Generated at Nkula A hydroelectric plant	
Change Description:	Retire indicator
Change	Replace indicator with common Indicator 'Generation Capacity Added"
Justification:	MCC requires new common indicator
Generation capacity added	
Change Description:	New indicator: Add Power Common Indicator P-6
Change	Definition: Generation capacity added, measured in megawatts, resulting from construction of new generating capacity or reconstruction, rehabilitation, or upgrading of existing generating capacity funded with MCC support.
Justification:	MCC requires new common indicator
Disaggregation:	(A) Power generation source (On-grid/Off-grid); (B) Power source type (Renewable (including hydro)/Thermal)

Project:	**Infrastructure Development Project (IDP)**
Sub-Activity:	**N/A**
Kilometers of transmission lines upgraded or built	
Change Description:	New indicator: Add Power Common Indicator P-7.
Change	The suggested indicator will collapse the 3 separate transmission line indicators (on 66, 132 and 400 kV) in the ITT into one. The definition for this indicator is "the sum of linear kilometres of new, reconstructed, rehabilitated, or upgraded transmission lines that have been energized, tested and commissioned with MCC support.
Justification:	MCC requires new common indicator.
Disaggregation:	Transmission line type (66, 132, 400 kV)
New 132-kV lines built	
Change description	Retire indicator from the ITT and the M&E Plan
Justification:	MCC Requires new common indicator
Justification Description:	Indicator to be replaced with common indicator P-7
New 66-kV lines built	
Change description	Retire indicator from the ITT and the M&E Plan
Justification:	MCC Requires new common indicator
Justification Description:	Indicator to be replaced with common indicator P-7

Project:	**Infrastructure Development Project (IDP)**
Sub-Activity:	**N/A**
New 400-kV lines built	
Change description	Retire indicator from the ITT and the M&E Plan
Justification:	MCC Requires new common indicator
Justification Description:	Indicator to be replaced with common indicator P-7
SCADA Coverage Transmission	
Change Description:	Modify Baseline, Classification and target.
Change	Baseline change from 50 to 46 Year 5 Target change from 85 to 68
Justification:	Work Plan updates from IDP Contractors
Justification Description:	(1) Change based on figures submitted from ESCOM (2) Since this is a percentage it should be classified as level
SCADA Availability Transmission	
Change Description:	Retire the indicator
Change	N/A
Justification:	Indicator quality is determined poorer than initially thought when included in plan
Justification Description:	The figures currently being provided by ESCOM does not seem to accurately SCADA availability. In addition also, the target is below the baseline, and the data being reported seems to be of little utility for monitoring purposes.

Project:	**Infrastructure Development Project (IDP)**
Sub-Activity:	**N/A**
Transmission substation capacity added	
Change Description:	Change indicator name, definition, baseline and year-end target
Change	(1) Change indicator name from "New Transmission Substation Capacity added by the Compact" to " Transmission substation capacity added" (2) Revise indicator definition to The total added transmission substation capacity, measured in megavolt amperes that is energized, commissioned and accompanied by a test report and supervising engineer's certification resulting from new construction or refurbishment of existing substations that is due to MCC support. (3) Change the baseline from 991.5 to 0 MVA (4) Change the end year target from 1,442.5 to 670 MVA
Justification:	MCC requires new common indicator Baseline change
Justification Description:	The new indicator will measure only the capacity to be added by the compact whereas the old indicator was measuring capacity including that added by ESCOM
Kilometres of distribution lines upgraded or built	
Change Description:	Modify indicator definition
Change	Change indicator definition from "Km of new 33-kV lines upgraded or built by Activity" "The sum of linear kilometers of new, reconstructed, rehabilitated, or upgraded distribution lines that have been energized, tested and commissioned with MCC support."
Justification:	MCC requires new common indicator
Distribution substation capacity added by Compact	
Change Description:	Change indicator name, definition, baseline, and year 5 target
Change	(1) Change indicator name from "New Distribution Substation Capacity added and energized by compact" to "Distribution substation capacity added by Compact"

Project:	**Infrastructure Development Project (IDP)**
Sub-Activity:	**N/A**
	(2) Previous Definition: Sum of distribution transformer capacity added and operational by Compact **Revised definition**: The total added substation capacity, measured in megavolt amperes that is energized, commissioned and accompanied by a test report and supervising engineer's certification resulting from new construction or refurbishment of existing substations supported by MCC. (3) Change the baseline from 868 to 0 MVA (4) Change the year 5 target 942 to 74 MVA
Justification:	MCC Requires new common indicator Baseline update
Justification Description:	The baseline and year 5 targets have been revised so that it only indicates the amount to be added through Compact intervention.
Temporary Employment Generated	
Change Description:	Change indicator name and definition.
Change	Revised name: Change indicator name from Temporary employment generated to Temporary employment generated in power infrastructure construction. Revised definition: The number of people temporarily employed or contracted by MCA-contracted construction companies to work on construction of new power infrastructure or reconstruction, rehabilitation, or upgrading of existing power infrastructure. Disaggregation: Sex (Female/Male); Labour source (Foreign/Local); Skill level (Skilled/Semi-skilled/Un-skilled)
Justification:	MCC Requires new common indicator
Percent disbursed of power infrastructure feasibility and design contracts	
Change Description:	Change indicator classification, historical figures and add year 5 targets
Change	Change indicator classification from cumulative to level Add year 5 Values as follows: Percent disbursed of power infrastructure feasibility and design contracts (100); Value of signed power infrastructure feasibility and design contracts (US$5,613,816.02); Value disbursed of signed power infrastructure feasibility and design contracts ((US$5,613,816.02); Change historical values of amount committed and disbursed to reflect current percentage calculations

Project:	Infrastructure Development Project (IDP)							
Sub-Activity:	**N/A**							
	Oct-Dec13	**Jan- Mar14**	**Apr-Jun14**	**Jul-Sep 14**	**Oct-Dec 14**	**Jan-Mar 15**	**Apr-Jun 15**	**Jul-Sep 15**
% disbursed	10%	13%	31%	63%	87%	93%	98%	98%
Value signed	$5,613,816	$5,613,816	$5,613,816	$5,613,758	$5,651,528	$5,920,640	$5,943,608	$5,943,608
Value disbursed	$572,012	$706,460	$1,741,703	$3,535,465	$4,913,316	$5,508,360	$5,797,421	$5,797,421
	Oct-Dec 15	**Jan-Mar 16**	**Apr-Jun 16**	**Jul-Sep 16**	**Oct-Dec 16**	**Jan-Mar 17**		
% disbursed	98%	98%	98%	98%	98%	98%		
Value signed	$5,943,608	$5,943,608	$5,943,608	$5,943,608	$5,943,608	$5,943,608		
Value disbursed	$5,797,421	$5,797,421	$5,797,421	$5,797,421	$5,797,421	$5,797,421		
Justification:	Corrections to erroneous data (1).							
Justification Description:	As a percentage, this indicator would make more sense as a level indicator. In addition, Project team updated figures in the SAP which necessitated the revisions in the ITT							
Percent disbursed of power infrastructure construction contracts								
Change Description:	Add year 5 targets and Change indicator historical figures							
Change	Add year 5 Values as follows: Value of signed power infrastructure construction contracts (US$251,501,183.98); Value disbursed of signed power infrastructure construction contracts (US$251,501,183.98); Change historical values of amount committed and disbursed to reflect current percentage calculations. Totals should match disaggregated data from values signed and disbursed under Nkula A, Transmission network upgrade and T&D as described below.							
	Jul-Sep 14	**Oct-Dec 14**	**Jan-Mar 15**	**Apr-Jun 15**	**Jul-Sep 15**	**Oct-Dec 15**	**Jan-Mar 16**	**Apr-Jun 16**
% disbursed	15%	3%	4%	8%	4%	15%	17%	22%
Value signed	$2,364,211	$21,121,486	$21,140,111	$21,190,580	$158,093,767	$170,112,275	$187,067,647	$201,368,541
Value disbursed	$354,626	$712,753	$869,612	$1,615,946	$6,238,149	$25,158,841	$32,229,574	$43,369,025
	Jul-Sep 16	**Oct-Dec 16**	**Jan-Mar 17**					
% disbursed	25%	31%	37%					
Value signed	$208,763,830	$210,499,946	$214,445,845					

Project:	**Infrastructure Development Project (IDP)**							
Sub-Activity:	**N/A**							
Value disbursed	$53,067,073	$64,494,640	$79,011,387					
Justification:	Corrections to erroneous data							
Justification Description:	RAP Option signed value which was initially added to the feasibility values were removed from feasibility contracts and added to the construction contracts.							
Value of signed and disbursed Nkula A construction contracts								
Change	Add year 5 targets and Change historical values							
Change Description:	Add year 5 Values as follows: Value of signed Nkula A construction contracts (US$31,620,690); Value disbursed of signed Nkula A construction contracts (US$31,620,690); Change historical values from year 2 in MCC ITT							
	Jul-Sep 14	**Oct-Dec 14**	**Jan-Mar 15**	**Apr-Jun 15**	**Jul-Sep 15**	**Oct-Dec 15**	**Jan-Mar 16**	**Apr-Jun 16**
Value signed	$101	$2,847,179	$2,860,064	$2,873,228	$35,722,373	$35,728,077	$35,730,040	$35,918,997
Value disbursed	0	0	$1,273	$7,554	$700,813	$860,486	$5,469,000	$5,651,382
	Jul-Sep 16	**Oct-Dec 16**	**Jan-Mar 17**					
Value signed	$36,061,074	$36,062,574	$36,492,956					
Value disbursed	$6,030,992	$6,285,004	$6,518,575					
Justification:	Corrections to erroneous data							
Justification Description:	Project team updated figures in the SAP which necessitated the revisions in the ITT							
Value of signed and disbursed Transmission Network Upgrade Activity construction contracts								
Change	Add year 5 target and Change historical values							
Change Description:	Add year 5 Values as follows: Value of signed Transmission Network Upgrade Activity construction contracts (US$156,253,385.98); Value disbursed of signed Transmission Network Upgrade Activity construction contracts (US$156,253,385.98); Change historical values from year 2 in MCC ITT							

Project:	**Infrastructure Development Project (IDP)**							
Sub-Activity:	**N/A**							
	Jul-Sep 14	**Oct-Dec 14**	**Jan-Mar 15**	**Apr-Jun 15**	**Jul-Sep 15**	**Oct-Dec 15**	**Jan-Mar 16**	**Apr-Jun 16**
Value signed	$1,891,337	$11,222,357	$11,064,552	$11,078,641	$115,136,800	$119,611,255	$125,001,534	$128,986,620
Value disbursed	$354,626	$709,253	$851,798	$1,466,256	$3,923,775	$20,643,785	$22,848,610	$31,621,952
	Jul-Sep 16	**Oct-Dec 16**	**Jan-Mar 17**					
Value signed	$131,661,857	$133,129,727	$135,270,907					
Value disbursed	$35,983,362	$45,847,449	$58,947,180					
Justification:	Corrections to erroneous data							
Justification Description:	Project team updated figures in the SAP which necessitated the revisions in the ITT							
Value of signed and disbursed T&D Upgrade Activity construction contracts								
Change	Add year 5 targets and change historical values							
Change Description:	Add year 5 Values as follows: Value of signed T&D Upgrade Activity construction contracts (US$63,627,108); Value disbursed of signed T&D Upgrade Activity construction contracts (US$63,627,108); Change historical values from year 2 in MCC ITT							
	Jul-Sep 14	**Oct-Dec 14**	**Jan-Mar 15**	**Apr-Jun 15**	**Jul-Sep 15**	**Oct-Dec 15**	**Jan-Mar 16**	**Apr-Jun 16**
Value signed	$472,773	$7,051,951	$7,215,494	$7,238,712	$7,234,594	$14,772,943	$26,336,073	$36,462,923
Value disbursed	0	$3,501	$16,541	$142,136	$1,613,561	$3,654,570	$3,911,964	$6,095,691
	Jul-Sep 16	**Oct-Dec 16**	**Jan-Mar 17**					
Value signed	$41,040,898	$41,307,645	$42,681,982					
Value disbursed	$11,052,720	$12,362,188	$13,545,631					
Justification:	Corrections to erroneous data							
Justification Description:	Project team updated figures in the SAP which necessitated the revisions in the ITT							

Table 3: Power Sector Reform Indicators

Project	**Power Sector Reform Project (PSRP)**						
Activity	**ESCOM Turnaround; Regulatory Strengthening**						
Sub Activity:	**N/A**						
Operating Cost - Recovery Ratio (based on operating expenses) (%)							
Change	Change Baseline, disaggregation, and re-computation of historical values.						
Change Description:	Include this indicator as a disaggregate of P-24 and change indicator name from "**Cost-Recovery Ratio**" to **"Operating cost-recovery ratio"** to align with MCC Common indicator P-24**.** Change baseline value from 175 to 161Re-computation of historical of values as stated below:						
	Oct-Dec13	**Jan- Mar14**	**Apr-Jun14**	**Jul-Sep 14**	**Oct-Dec 14**	**Jan-Mar 15**	**Apr-Jun 15**
Revised value	173.35	176.45	122.46	194.69	155.44	159.58	72.44
	Jul-Sep 15	**Oct-Dec 15**	**Jan-Mar 16**	**Apr-Jun 16**	**Jul-Sep 16**	**Oct-Dec 16**	**Jan-Mar 17**
Revised value	179.23	159.87	170.07	101.96	191.13	143.93	143.81
Justification:	Corrections to erroneous data Baseline change						
Justification Description:	This is based on re-computation during the second DQA and updated figures from latest DQA. Inconsistency was observed in the raw data available in ITT with the source file (updated DFM with audited figures).						
Operating Cost - Cost Recovery Ratio (based on operating expenses + Depreciation (%))							
Change	Change Indicator name Change baseline Change historical values.						
Change Description:	Change indicator name from "**Cost-Recovery Ratio**" to **"Operating cost-recovery ratio"** to align with MCC Common indicator P-24**.** The definition is already aligned. Change baseline from 160 to 150 Re-computation of historical values for year 2 as reflected below						
	Oct-Dec13	**Jan- Mar14**	**Apr-Jun14**	**Jul-Sep 14**	**Oct-Dec 14**	**Jan-Mar 15**	**Apr-Jun 15**
Revised value	157.87%	159.98%	121.87%	186.68%	135.92%	159.58%	69.97%

Project	**Power Sector Reform Project (PSRP)**						
Activity	**ESCOM Turnaround; Regulatory Strengthening**						
Sub Activity:	**N/A**						
	Jul-Sep 15	**Oct-Dec 15**	**Jan-Mar 16**	**Apr-Jun 16**	**Jul-Sep 16**	**Oct-Dec 16**	**Jan-Mar 17**
Revised value	161.93%	148.29%	160.41%	96.52%	177.55%	135.03%	137.42%
Justification:	MCC requires new common Corrections to erroneous data Baseline change						
Justification Description:	Updated DFM figures and error in computation observed during DQA (margin of error -6.4%). Inconsistency was observed in the raw data available in ITT with the source file.						
Operating Cost - Cost Recovery Ratio (based on operating expenses + Depreciation + Return) (%)							
Change	Change baseline value, yearly targets, disaggregation and re-computation of historical figures						
Change Description:	Include this indicator as a disaggregate of P-24 and change indicator name from "**Cost-Recovery Ratio**" to **"Operating cost-recovery ratio"** to align with MCC Common indicator P-24**.** Change baseline value from 142 to 113 Change years targets as follows: Year 1 (from 135 to 100); year 2 (from 106 to 100); year 3 (from 118 to 100); and year 5 (from 120 to 100) Re-computation of historical values as reflected below:						
	Oct-Dec13	**Jan- Mar14**	**Apr-Jun14**	**Jul-Sep 14**	**Oct-Dec 14**	**Jan-Mar 15**	**Apr-Jun 15**
Revised value	117.99%	115.12%	100.91%	117.44%	96.08%	101.72%	55.12%
	Jul-Sep 15	**Oct-Dec 15**	**Jan-Mar 16**	**Apr-Jun 16**	**Jul-Sep 16**	**Oct-Dec 16**	**Jan-Mar 17**
Revised value	104.12%	94.69%	109.36%	77.53%	110.55%	86.93%	93.17%
Justification:	Baseline change Corrections to erroneous data						

Project	**Power Sector Reform Project (PSRP)**						
Activity	**ESCOM Turnaround; Regulatory Strengthening**						
Sub Activity:	**N/A**						
Justification Description:	-A mix of conceptual as well as computation error was observed: value of WACC and rate base of previous year is used for computation of indicator value for 2015. Further, gearing ratio was wrongly computed as Debt divided by Equity whereas the correct approach is Debt divided by (Debt + Equity) '-Further, inconsistency is observed in the raw data available in ITT with the source file. -Lastly, there is a need to re-look into the computation of WACC, which has been considered constant at 21.24% since Jul' 2009. Given that the inflation rate in Malawi is over 20%, the nominal interest rate (and the cost of debt for ESCOM) is expected to be higher, with cost of equity being even higher. **Recommendations:** · WACC should be multiplied with the rate base for the year 2015 to compute the return for the year 2015. · Rate base should be computed as per the following formula: Rate base[1] = Net Fixed Assets financed by utility (NFA) – Consumer Contributions, Grants etc. – Deferred tax assets+ Net working capital (NWC); Where: NFA = Gross Fixed Assets less Assets financed through grants/ contributions less Accumulated depreciation on utility financed assets + Capital Work in Progress(CWIP); NWC = Current assets less Current liabilities o While computing the quarterly cost recovery ratios, 1/4th of the return on asset base needs to be considered as the WACC figure is annual in nature.						
Average cost of electricity billed (US$/kWh)							
Change	Change indicator level from output to outcome. Revise targets for indicator. Updates historical figures.						
Change Description:	Re-computation of historical indicator Values, change on indicator level, and unit of measurement from USD to USD/kWh. Remove targets on this indicator as cost of service study is still underway.						
	Oct-Dec13	**Jan- Mar14**	**Apr-Jun14**	**Jul-Sep 14**	**Oct-Dec 14**	**Jan-Mar 15**	**Apr-Jun 15**
Revised value	$0.05	$0.05	$0.09	$0.08	$0.09	$0.10	$0.16
	Jul-Sep 15	**Oct-Dec 15**	**Jan-Mar 16**	**Apr-Jun 16**	**Jul-Sep 16**	**Oct-Dec 16**	**Jan-Mar 17**
Revised value	$0.08	$0.08	$0.08	$0.11	$0.05	$0.07	$0.06

Project	**Power Sector Reform Project (PSRP)**						
Activity	**ESCOM Turnaround; Regulatory Strengthening**						
Sub Activity:	**N/A**						
Justification:	Corrections to erroneous data						
Justification Description:	-An error in the application of formula was observed: Exchange rate is applied twice while computing the value of indicator. -The total electricity consumption for the northern region – industrial consumers does not include the industrial consumption pertaining to 'Scale III Maximum Demand Low Voltage Time of Use' consumption category for all months, whereas it was included for southern and central region industrial customers.						
Debt-Equity Ratio							
Change Description:	Retire indicator						
Justification:	Indicator has been added which is superior in measuring same variable						
Justification Description:	Both Debt-equity ratio and gearing ratio measure the indebtedness of ESCOM. However debt-equity ratio only looks at long term debt which has been zero since Q3 whereas gearing ratio includes all debt types.						
Gearing Ratio							
Change:	Add baseline data and historical values						
Change description:	Add 0.25 as the baseline figure						
Targets	**Baseline**	**2014**	**2015**	**2016**	**2017**		
Revised	0.25	0.66	0.66	0.66	0.66		
Actuals	**Oct-Dec13**	**Jan- Mar14**	**Apr-Jun14**	**Jul-Sep 14**	**Oct-Dec 14**	**Jan-Mar 15**	**Apr-Jun 15**
Revised value	0.49	0.45	0.25	0.19	0.20	0.20	0.24
	Jul-Sep 15	**Oct-Dec 15**	**Jan-Mar 16**	**Apr-Jun 16**	**Jul-Sep 16**	**Oct-Dec 16**	**Jan-Mar 17**
Revised value	0.24	0.23	0.22	0.26	0.31	0.31	0.39

Project	**Power Sector Reform Project (PSRP)**						
Activity	**ESCOM Turnaround; Regulatory Strengthening**						
Sub Activity:	**N/A**						
Justification	Baseline update TBD replaced with targets						
Justification description	Baseline data was not incorporated during the first review for the period. The baseline and Year 1-4 targets had no values in the M&E Plan.						
Average Creditor Days							
Change (1)	Change indicator level , reporting frequency, baseline, historical data and create two versions of this indicator						
Change description	Change indicator level in Annex II of the M&E Plan from "output" to "outcome" Change reporting frequency from Quarterly to annual and change indicator name to "Average Creditor Days (Annual)" calculated as "365 * [(Beginning accounts payables + ending accounts payables) / 2) /Total sales]" Revise annual historical Data as follows: Baseline Year: 27; Year 1: 156; Year 2: from 135 to 40; Year 3: from 75 to 72; Add yearly targets of 45 for each year.						
Justification	Baseline change Corrections to erroneous data						
Change (2)	Create a new version of this indicator to be called "Average Creditor Days (Quarterly)" to be reported on quarterly basis and calculated as "91.25 * [(Beginning accounts payables + ending accounts payables) / 2) /Total sales]" Change indicator level baseline value from 75 to 27, and updating of historical values and target for year 1 (from 30 to 45 throughout the years). Insert N/A for periods Apr-Jun14 and Jan-Mar17 as computed values were negative.						
	Oct-Dec13	**Jan- Mar14**	**Apr-Jun14**	**Jul-Sep 14**	**Oct-Dec 14**	**Jan-Mar 15**	**Apr-Jun 15**
Revised value	39	30	N/A	13	53	45	29
	Jul-Sep 15	**Oct-Dec 15**	**Jan-Mar 16**	**Apr-Jun 16**	**Jul-Sep 16**	**Oct-Dec 16**	**Jan-Mar 17**
Revised value	18	29	67	77	175	144	N/A
Justification:	(1) Corrections erroneous data						

Project	**Power Sector Reform Project (PSRP)**						
Activity	**ESCOM Turnaround; Regulatory Strengthening**						
Sub Activity:	**N/A**						
Justification Description:	· Beginning accounts payable not considered which should not be the case · When computing value of indicator for a quarter, 365/4 should be considered as the multiplying factor · "Total purchases of the year" was being used for the calculation of the quarterly average creditor days. **Recommendations:** · The indicator value should be computed as per the formula defined in the ITT sheet. · The yearly/quarterly value of the indicator should be calculated by taking an average of beginning accounts payables and ending accounts payables. This average to be divided by the total purchases of the particular period. · Beginning Accounts payable of any period shall be considered as the ending accounts payable of the previous period. · Calculation of quarterly average collection period in days should take into account the purchases of the particular quarter. · Similarly the value 365 is used in the formula for the calculation of yearly average creditor days. For calculation of quarterly average creditor days, 91.25 days should be used.						
Average collection period							
Change	Change indicator level , reporting frequency, baseline, historical data and create two versions of this indicator						
Change description	Change indicator level in Annex II of the M&E Plan from "output" to "outcome" Change reporting frequency from Quarterly to annual and change indicator name to "Average Collection Period (Annual)" calculated as "365 Days * [(Beginning accounts receivables + ending accounts receivable) / 2) / Total sales]"						
Justification	Corrections to erroneous data						
Change (2)	Create a new version of this indicator called "Average Collection Period (Quarterly)" to be reported on quarterly basis and calculated as "91.25 Days * [(Beginning accounts receivables + ending accounts receivable) / 2) / Total sales]" Change baseline from 54 to 72. Include yearly targets as 60 in each year. Include annual historical data as follows; Year 1: 75; Year 2: 77; Year 3: 75; Change quarterly historical data as stated below						
	Oct-Dec13	**Jan- Mar14**	**Apr-Jun14**	**Jul-Sep 14**	**Oct-Dec 14**	**Jan-Mar 15**	**Apr-Jun 15**

Project	**Power Sector Reform Project (PSRP)**						
Activity	**ESCOM Turnaround; Regulatory Strengthening**						
Sub Activity:	**N/A**						
Revised value	69	70	76	79	80	98	80
	Jul-Sep 15	**Oct-Dec 15**	**Jan-Mar 16**	**Apr-Jun 16**	**Jul-Sep 16**	**Oct-Dec 16**	**Jan-Mar 17**
Revised value	77	94	81	72	86	76	95
Justification	Frequent revisions to DFM figures for calculating this indicator hence the revisions and suggestion to have to have a separate indicator						
Financial Plans updated							
Change	Change Unit of measurement, reporting frequency and add baseline and targets						
Change description	Change unit of measurement from “Date” to “Number” Change reporting frequency from “quarterly” to “annual” Add zero as the baseline Include targets as follows: 1 (2014) 2 (2015) 3(2016) 4 (2017) and 5 (2018)						
Justification	Work plan update						
ESCOM Public Annual Report and Audited Financial Statements							
Change	Modify indicator classification and yearly targets						
Change description	Change indicator classification from “Level” to “Cumulative” Revise yearly targets from year 2 to year 5 as follows: 2 (2015) 3(2016) 4 (2017) and 5 (2018)						
Justification	Work plan update						

Project	**Power Sector Reform Project (PSRP)**
Activity	**ESCOM Turnaround; Regulatory Strengthening**
Sub Activity:	**N/A**
Transition to pre-paid metering system	
Change	Modify baseline and targets.
Change description	Update from TBD. Baseline: 36 Year 1: 50 Year 2: 100 Year 3: 100 Year 4: 100 Year 5: 100 End of Compact Target: 100
Justification	Update from TBD
Non-technical loss reduction study	
Change	Change reporting frequency, revise baseline value, correct indicator name in Annex II and add target
Change description	Change reporting frequency from "quarterly" to "once" since this is a date indicator Delete baseline value of zero Correct Indicator name in Annex II from "**Non-technical loss reduction study**" to "**Non-technical loss reduction study**" Add year 3 target as 5th October 2015
Justification	Work plan update
Exchange visits with regulators	
Change Description:	Retire the indicator
Change	Retire the indicator in the M&E Plan

Project	**Power Sector Reform Project (PSRP)**
Activity	**ESCOM Turnaround; Regulatory Strengthening**
Sub Activity:	**N/A**
Justification	Indicator quality is determined poorer than initially thought when included in plan
Tariff Application Processing Time	
Change Description:	Retire the indicator
Change	Retire the indicator in the M&E Plan
Justification	Indicator quality is determined poorer than initially thought when included in plan
MERA Public Annual Report and Audited Financial Statements	
Change Description:	Retire the indicator
Change	Retire the indicator in the M&E Plan
Justification	Indicator quality is determined poorer than initially thought when included in plan
Customer Satisfaction and Perception of ESCOM Service	
Change Description:	Retire the indicator
Change	Retire the indicator in the M&E Plan
Justification	Cost of data collection for indicator outweighs usefulness
Turnaround Facility Funded by GOM	
Change Description:	Retire the indicator

Project	**Power Sector Reform Project (PSRP)**
Activity	**ESCOM Turnaround; Regulatory Strengthening**
Sub Activity:	**N/A**
Change	Retire the indicator in the M&E Plan
Justification	No turnaround facility was financed since inception.
Turnaround Facility Funded by Government-as a fraction of amount in Financial Plan	
Change Description:	Retire the indicator
Change	Retire the indicator in the M&E Plan
Justification	No turnaround facility was financed since inception.
Power Market Structure Report Produced	
Change Description:	Retire disaggregates of this indicator except "Implementation of new Market Restructure Plan"
Change	Retire the indicator disaggregates in the M&E Plan, change classification of the aggregate to "Date", change frequency of reporting from "quarterly" to "once"
Justification	Measures key outputs under power market restructuring.
Implementation of new Market Restructure Plan	
Change Description:	Include this as a separate indicator and change frequency of reporting
Change	Include this as a separate indicator in the ITT and not a disaggregate of "Power Market Structure Report Produced" and change frequency of reporting from "quarterly" to "once" Include only 30th June 2018 as the target and delete the other yearly targets
Justification	Measures key outputs under power market restructuring.

Project	**Power Sector Reform Project (PSRP)**
Activity	**ESCOM Turnaround; Regulatory Strengthening**
Sub Activity:	**N/A**
Energy Policy Reviewed	
Change Description:	Change indicator name Change reporting frequency Retire disaggregates of this indicator
Change	Change Indicator name from "Energy Policy Reviewed" to "Final Energy Policy Produced , change reporting frequency from "quarterly" to "once" and retire the indicator disaggregates in the M&E Plan
Justification	Existing indicators do not sufficiently meet adequacy criteria
Electricity Act Reviewed	
Change Description:	Change indicator name from "Electricity Act Reviewed" to "Electricity Act Amended. Change Frequency of Reporting Retire disaggregates of this indicator
Change	Change indicator name, change reporting frequency from "quarterly" to "once" and retire the indicator disaggregates in the M&E Plan
Justification	Existing indicators do not sufficiently meet adequacy criteria
Rural Electrification Act Amended	
Change Description:	Retire this indicator
Change	Retire the indicator in the M&E Plan
Justification	Irrelevant due to change in Program, Project or Activity scope

Project	**Power Sector Reform Project (PSRP)**
Activity	**ESCOM Turnaround; Regulatory Strengthening**
Sub Activity:	**N/A**
Standard Power Purchasing Agreement	
Change Description:	Retire this indicator
Change	Retire the indicator in the M&E Plan
Justification	This is a lower level indicator
Renewable Energy Feed-in Tariff	
Change Description:	Retire this indicator
Change	Retire the indicator in the M&E Plan
Justification	Irrelevant due to change in Program, Project or Activity scope
Cost-reflective Levies and charges	
Change Description:	Retire this indicator
Change	Retire the indicator in the M&E Plan
Justification	Replaced by a common power indicator.
Phased implementation plan for cost reflective tariff regime developed	
Change Description:	Retire this indicator
Change	Retire the indicator in the M&E Plan
Justification	Replaced by a common power indicator.

Project	**Power Sector Reform Project (PSRP)**
Activity	**ESCOM Turnaround; Regulatory Strengthening**
Sub Activity:	**N/A**
Tariff design efficiency that includes a lifeline tariff developed	
Change Description:	Retire this indicator
Change	Retire the indicator in the M&E Plan
Justification	Irrelevant due to change in Program, Project or Activity scope
Corporate Governance Benchmarking Study Report	
Change Description:	Change frequency of reporting, Retire disaggregates of this indicator, revise indicator targets and classification
Change	Retire indicator disaggregates in the M&E Plan change indicator target from 30th June 2015 to 30th September 2017 Revise indicator classification from "Regulatory Strengthening Activity" to "ESCOM Turnaround Activity" Change frequency of reporting from "quarterly" to "once"
Justification	Work plan update
Sector Benchmarking Study	
Change Description:	Retire disaggregates of this indicator, change frequency of reporting and revise indicator targets
Change	Retire indicator disaggregates in the M&E Plan, Change frequency of reporting from "quarterly" to "once" and change indicator target from 30th June 2015 to 30th September 2017
Justification	Work plan update
Peer Reviews Conducted	
Change Description:	Retire this indicator

Project	**Power Sector Reform Project (PSRP)**							
Activity	**ESCOM Turnaround; Regulatory Strengthening**							
Sub Activity:	**N/A**							
Change	Retire the indicator in the M&E Plan							
Justification	Indicator not directly linked to MCA-Malawi direct interventions.							
Temporary Employment Generated								
Change Description:	Retire this indicator							
Change	Retire the indicator in the M&E Plan							
Justification	Irrelevant due to change in Program, Project or Activity scope							
Value of signed and disbursed power sector reform project contracts								
Change Description:	Change indicator classification, historical values and add year 5 targets							
Change	(1) Change indicator classification from level to cumulative (2) Add year 5 targets as follows: Percent disbursed of signed power sector reform project contracts (100); Value of signed power sector reform project contracts (US$25,700,000); Value disbursed of signed power sector reform project contracts (US$25,700,000); (3) Change value historical values as stated below:							
	Jul-Sep 13	**Oct-Dec13**	**Jan- Mar14**	**Apr-Jun14**	**Jul-Sep 14**	**Oct-Dec 14**	**Jan-Mar 15**	**Apr-Jun 15**
% disbursed	27%	22%	23%	47%	28%	42%	52%	66%
Value signed	$816,278	$2,047,083	$2,961,694	$3,004,339	$8,307,836	$8,308,627	$8,254,942	$8,507,082
Value disbursed	$223,042	$444,532	$693,917	$1,406,842	$2,337,454	$3,472,531	$4,310,918	$5,575,417
	Jul-Sep 15	**Oct-Dec 15**	**Jan-Mar 16**	**Apr-Jun 16**	**Jul-Sep 16**	**Oct-Dec 16**	**Jan-Mar 17**	
% disbursed	67%	75%	67%	78%	50%	56%	57%	
Value signed	$9,515,132	$10,198,794	$12,371,642	$12,240,233	$21,401,004	$21,892,138	$23,588,328	

Project	**Power Sector Reform Project (PSRP)**							
Activity	**ESCOM Turnaround; Regulatory Strengthening**							
Sub Activity:	**N/A**							
Value disbursed	$6,390,344	$7,647,782	$8,294,954	$9,513,273	$10,656,163	$12,173,898	$13,525,868	
Justification:	Corrections to erroneous data							
Justification Description:	Indicator classification should be changed cumulative as the value of contracts increase from quarter to quarter. MCC Common Indicators in other sectors that involve the value of contracts signed/disbursed are prescribed as "Cumulative."							
Value of signed and disbursed ESCOM Turnaround Activity contracts								
Change Description:	Change indicator classification, add historical values and change historical data							
Change	Change indicator classification from level to cumulative, Add year 5 targets as follows: Value of signed ESCOM Turnaround Activity contracts (US$19,350,000); Value disbursed of signed ESCOM Turnaround Activity contracts (US$19,350,000); Change historical values.							
	Jul-Sep 13	**Oct-Dec13**	**Jan- Mar14**	**Apr-Jun14**	**Jul-Sep 14**	**Oct-Dec 14**	**Jan-Mar 15**	**Apr-Jun 15**
Value signed	$816,278	$1,212,183	$1,781,929	$1,823,209	$6,334,651	$6,335,442	$6,445,910	$6,695,067
Value disbursed	$223,042	$406,582	$580,067	$1,116,791	$1,763,328	$2,576,346	$3,338,406	$4,395,024
	Jul-Sep 15	**Oct-Dec 15**	**Jan-Mar 16**	**Apr-Jun 16**	**Jul-Sep 16**	**Oct-Dec 16**	**Jan-Mar 17**	
Value signed	$6,981,716	$7,632,718	$9,198,028	$9,597,806	$18,586,072	$18,592,248	$19,001,136	
Value disbursed	$4,935,879	$5,824,368	$6,242,482	$7,220,216	$8,107,379	$9,479,332	$10,679,499	
Justification:	Correction to erroneous data.							
Justification Description:	Indicator classification should be changed to cumulative as the value of contracts build from quarter to quarter. MCC Common Indicators in other sectors that involve the value of contracts signed/disbursed are prescribed as "Cumulative."							
Value of signed and disbursed Regulatory Strengthening Activity contracts								
Change Description:	Change indicator classification, add year 5 targets and change historical							
Change	(1) Change indicator classification from level to cumulative							

Project	**Power Sector Reform Project (PSRP)**							
Activity	**ESCOM Turnaround; Regulatory Strengthening**							
Sub Activity:	**N/A**							
	(2) Add year 5 targets as follows: Value of signed Regulatory Strengthening Activity contracts (US$6,350,000); Value disbursed of signed Regulatory Strengthening Activity contracts (US6,350,000) (3) Change historical values							
	Jul-Sep 13	**Oct-Dec13**	**Jan- Mar14**	**Apr-Jun14**	**Jul-Sep 14**	**Oct-Dec 14**	**Jan-Mar 15**	**Apr-Jun 15**
Value signed	$0	$834,900	$1,179,765	$1,181,130	$1,973,185	$1,973,185	$1,809,031	$1,812,015
Value disbursed	$0	$37,950	$113,850	$290,050	$574,127	$896,185	$972,512	$1,180,392
	Jul-Sep 15	**Oct-Dec 15**	**Jan-Mar 16**	**Apr-Jun 16**	**Jul-Sep 16**	**Oct-Dec 16**	**Jan-Mar 17**	
Value signed	$2,533,417	$2,566,076	$3,173,613	$2,642,427	$2,814,932	$3,299,890	$4,587,192	
Value disbursed	$1,454,465	$1,823,414	$2,052,471	$2,293,056	$2,548,784	$2,694,566	$2,846,370	
Justification:	Correction to erroneous data.							
Justification Description:	Indicator classification should be changed to cumulative as the value of contracts build from quarter to quarter. MCC Common Indicators in other sectors that involve the value of contracts signed/disbursed are prescribed as "Cumulative."							
Quantity of Electricity Metered - All Regions								
Change Description:	Retire indicator							
Change	Retire indicator and replace with Common Indicator Total Electricity Sold							
Justification:	Common indicator has been added which is superior in measuring same variable							
Justification Description:	Although it is a SAR indicator, it is largely duplicative of the Total electricity sold indicator and indicators seem to have featured less prominently in the SAR process overall.							
Current Ratio								
Change Description:	Change baseline data							
Change	Change baseline data from 3.83 to 6.48							
Justification:	Baseline change							

Project	**Power Sector Reform Project (PSRP)**			
Activity	**ESCOM Turnaround; Regulatory Strengthening**			
Sub Activity:	**N/A**			
Justification Description:	Revised monthly figures from DFM during the base line led to changes in the baseline value			
Bad Debt				
Change Description:	(1) Change, Indicator level to outcome, and (2) Baseline data and indicator target for year one and two.			
Change:		**Baseline**	**2014**	**2015**
	Previous	20	13	8
	Revised	25	12	7
Justification:	baseline change Corrections to erroneous data			
Justification Description:	Revised monthly figures from DFM during the base line led to changes in the baseline value			
Acid or Quick Test				
Change Description:	Retire indicator			
Change	Retire Indicator from the M&E Plan			
Justification:	Cost of data collection for indicator outweighs usefulness			
Approved Tariff Levels and Schedules				
Change Description:	Retire indicator.			
Change	Retire Indicator from the M&E Plan			
Justification:	Indicator has been added which is superior in measuring same variable			

Project	**Power Sector Reform Project (PSRP)**							
Activity	**ESCOM Turnaround; Regulatory Strengthening**							
Sub Activity:	**N/A**							
Justification Description	New indicator "cost reflective tariff" added							
Cost-reflective tariff regime								
Change Description:	New indicator							
Change	Addition of a new output indicator defined as "**Average Tariff per kilowatt-hour / Long-run marginal cost per kilowatt-hour of electricity supplied to customers**" measured as percentage. Guidance: Long-run costs are a source of debate in the power sector. Many times energy utilities either do not have a clear understanding of their long-run cost, or have incentives to inflate those costs to receive a higher tariff from regulators. On the other hand, the regulator may have an incentive to keep tariffs down and to underestimate the true long-run costs of the sector. To obtain a reliable estimate of long-run marginal cost, MCC should use the figure calculated by a third party (i.e. neither the regulator, nor the utility). This could be part of a cost of service study, tariff reform study, or other due diligence materials. It is advisable that any studies consult an integrated or least cost expansion master plans adopted by government for the sector. The Average Tariff per kilowatt-hour should be computed as the weighted average of the approved tariffs based on demand projections for each tariff class by the regulator							
Justification:	MCC requires new common indicator							
Maintenance expenditure-asset value ratio								
Change Description:	New indicator							
Change	(i) Addition of a new output indicator defined as **"Actual maintenance expenditures / Total value of fixed assets"** measured as percentage (ii) **Primary Source:** DFM (iii) **Responsible Party:** ESCOM (iv) **Reporting frequency:** Quarterly (v) Add 2.5 as year 5 target **Add actuals as follows:**							
	Jul-Sep 14	**Oct-Dec 14**	**Jan-Mar 15**	**Apr-Jun 15**	**Jul-Sep 15**	**Oct-Dec 15**	**Jan-Mar 16**	**Apr-Jun 16**

Project	**Power Sector Reform Project (PSRP)**							
Activity	**ESCOM Turnaround; Regulatory Strengthening**							
Sub Activity:	**N/A**							
Value	3.5	5.5	2.4	14.1	4.6	5.1	7.8	17.8
	Jul-Sep 16	**Oct-Dec 16**	**Jan-Mar 17**					
Value	6.3	6.4	4.6					
Justification:	MCC requires new common indicator							
Training plans developed and implemented for managers								
Change Description:	Retire indicator							
Change	Retire indicator in the M&E Plan							
Justification:	Lower level indicator							
Justification Description:	This is lower level indicator that can be tracked outside the ITT							
New plans created and adopted by ESCOM Board								
Change Description:	Retire indicator							
Change	Retire indicator in the M&E Plan							
Justification:	Lower level indicator							
Justification Description:	This is lower level indicator that can be tracked outside the ITT							
Quality of ESCOM Corporate Governance								
Change Description:	Retire indicator							

Project	**Power Sector Reform Project (PSRP)**
Activity	**ESCOM Turnaround; Regulatory Strengthening**
Sub Activity:	**N/A**
Change	Retire indicator in the M&E Plan
Justification:	Lower level indicator
Justification Description:	This is lower level indicator that can be tracked outside the ITT
MERA Resolutions	
Change Description:	Retire indicator
Change	Retire indicator in the M&E Plan
Justification:	Lower level indicator
Justification Description:	This is lower level indicator that can be tracked outside the ITT
Regulatory Independence and Effectiveness	
Change Description:	Retire indicator
Change	Retire indicator in the M&E Plan
Justification:	Cost of data collection for indicator outweighs usefulness
Justification Description	The Bench Marking studies are being completed too late in the Compact and no actions will be taken to adopt new KPIs
Life line tariff access	
Change Description:	Retire indicator

Project	**Power Sector Reform Project (PSRP)**
Activity	**ESCOM Turnaround; Regulatory Strengthening**
Sub Activity:	**N/A**
Change	Program, Project or Activity scope change
Justification:	This concept of a life line tariff was dropped
Cost of supply	
Change Description:	Retire indicator
Change	Retire indicator in the M&E Plan
Justification:	Indicator has been added which is superior in measuring same variable
Justification Description	This indicator is being removed as this is being captured as an input to the Cost-reflective tariff regime Common Indicator
ESCOM Billing and Collection Efficiency	
Change Description:	Retire indicator
Change	Retire indicator in the M&E Plan
Justification:	Cost of data collection for indicator outweighs usefulness
Justification Description:	No data has been collected to date due to lack of equipment
Procurement Policies and procedures in place	
Change Description:	Retire indicator
Change	Retire indicator in the M&E Plan
Justification:	Indicator quality is determined poorer than initially thought when included in plan

Project	**Power Sector Reform Project (PSRP)**
Activity	**ESCOM Turnaround; Regulatory Strengthening**
Sub Activity:	**N/A**
Justification Description:	This is lower level indicator that can be tracked outside the ITT
Annual Procurement Plans produced by ESCOM	
Change Description:	Add new indicator
Change	Add new output indicator in the M&E Plan defined as "**Annual Procurement Plan produced by ESCOM"** **Unit:** Number **Indicator:** Classification: Cumulative **Primary Source:** ESCOM Procurement Department **Primary Source:** ESCOM Add zero as the baseline Include 1 as the yearly target and 5 as year 5/end of compact target
Justification:	Existing indicators do not sufficiently meet adequacy criteria
Cost of Service Study completed	
Change Description:	Add new indicator
Change	Add new output indicator in the M&E Plan defined as "**Cost of Service Study to establish long-run marginal costs for ESCOM completed"** **Primary Source:** MCA-MW PSRP Department **Primary Source:** MCA-MW Include 31st October 2017 as year 5/end of Compact target
Justification:	Existing indicators do not sufficiently meet adequacy criteria
Independent Power Producer Framework approved	
Change Description:	Add new indicator

Project	**Power Sector Reform Project (PSRP)**
Activity	**ESCOM Turnaround; Regulatory Strengthening**
Sub Activity:	**N/A**
Change	Add new output indicator in the M&E Plan defined as "**IPP Framework approved by Ministry responsible for Energy and published on its website"** **Primary Source:** Ministry responsible for Energy **Primary Source:** Ministry responsible for Energy Include 31st March 2017 as the target Include May 2017 as the actual data
Justification:	Existing indicators do not sufficiently meet adequacy criteria
Number of ESCOM and EGENCO employees who participate in gender trainings	
Change Description:	Add new indicator
Change	Add new output indicator in the M&E Plan defined as "**Number of ESCOM and EGENCO employees and Board of Director members who participate in trainings related to ESCOM's gender policy**" **Add 0 as the baseline** **Primary Source:** Consulting firm conducting the trainings **Primary Source:** MCA-MW
Justification:	Existing indicators do not sufficiently meet adequacy criteria
Disaggregation	Male/Female Level (Board, Senior Management, other staff)
Annualize Procurement Audits	
Change Description:	Retire indicator
Change	Retire indicator in the M&E Plan
Justification:	Indicator quality is determined poorer than initially thought when included in plan

Project	**Power Sector Reform Project (PSRP)**
Activity	**ESCOM Turnaround; Regulatory Strengthening**
Sub Activity:	**N/A**
Justification Description:	This is lower level indicator that can be tracked outside the ITT
Actual Tariff Levels and Schedules	
Change Description:	Retire indicator
Change	Retire indicator from the M&E Plan
Justification:	Indicator has been added which is superior in measuring same variable
Justification Description:	This indicator is being removed as this is being captured as an input to the Cost-reflective tariff regime Common Indicator
Tariff Indexation Framework	
Change Description:	Retire indicator
Change	Retire indicator in the M&E Plan
Justification:	Indicator quality is determined poorer than initially thought when included in plan
Tariff Indexation Framework Implemented on Time	
Change Description:	Retire indicator
Change	Retire indicator in the M&E Plan
Justification:	This is lower level indicator and cannot be added to the ITT which already has more indicators
Billing System Installed	
Change Description:	Modify frequency of reporting, indicator definition, and target
Change	Change frequency of reporting from quarterly to once. Change indicator definition from “Install robust billing system by Calendar Q1 2016” to “Install robust billing system by Q3 2018

Project	**Power Sector Reform Project (PSRP)**
Activity	**ESCOM Turnaround; Regulatory Strengthening**
Sub Activity:	**N/A**
	Revise target to April 30th, 2018.
Justification:	Work Plan Update
Justification Description:	This is a one off activity hence it quarterly cannot be the frequency of reporting
Action Plan to recover accounts receivable	
Change Description:	Retire indicator
Change	Retire indicator from the M&E Plan
Justification:	Indicator quality is determined poorer than initially thought when included in plan
Turnaround support team deployed	
Change Description:	Retire indicator
Change	Retire indicator from the M&E Plan
Justification:	Indicator quality is determined poorer than initially thought when included in plan

Table 4: Environment and Natural Resources Management Project

Project	**Environment and Natural Resources Management Project**
Activity	**Weed and Sediment Management; Environment and Natural Resources Management**
Sub Activity:	**N/A**
Electricity not generated due to weeds and sedimentation	
Change Description:	Change Indicator Definition, primary source, responsible party and add target values for year 5.
Change	(1) Change indicator definition to "Recorded output (MW) just before outage X Outage duration (h)" (2) As recommended by CRISIL, add year 5 target values as 50% of baseline values based on the impact of the proposed weed and sediment management interventions. The targets should be as follows aggregate (2,320), Nkula (1,564.5) Tedzani (281) & Kapichira (474.5). (3) Change responsible primary source to EGENCO Performance Monitoring Report (4) Change Responsible party to EGENCO
Justification:	Work plan update
Justification Description:	Proposed changes suggested by CRISIL during the second option DQA and responsibility changed due to unbundling of ESCOM to establish EGENCO
Distribution of invasive aquatic species	
Change Description:	Retire Indicator
Change	Retire indicator from the M&E Plan
Justification:	Cost of data collection for indicator outweighs usefulness
Water turbidity	
Change Description:	Modify, level of disaggregation, primary source, responsible party and reporting frequency
Change	Revise level of disaggregation from "Power Plant" to "None" Change primary source and responsible party to Southern and Blantyre Water Boards Change reporting frequency from Annual to Quarterly

Project	**Environment and Natural Resources Management Project**
Activity	**Weed and Sediment Management; Environment and Natural Resources Management**
Sub Activity:	**N/A**
Justification:	Data collected from Blantyre Water Board and Southern Region Water Board intake sites to provide data as proxy indicators for situation at head ponds
Justification Description:	Expecting data from Southern and Blantyre Water Boards to provide
Improved yields	
Change Description:	Retire the indicator
Change	Retire the indicator from the ITT
Justification:	Cost of data collection for indicator outweighs usefulness
Justification Description	The yields of farmers depend upon several factors apart from improved soil management and adoption of conservation techniques such as farming techniques, soil fertility, weather, diseases etc. Drawing any conclusion about the impact of 'practicing conservation agriculture in the shire river basin' through the Compact program would require widespread evaluation on yields which is not part of M&E activities
Women's inclusion in natural resource management	
Change Description:	Retire Indicator
Change	Retire indicator from the M&E Plan
Justification:	Cost of data collection for indicator outweighs usefulness
Justification Description:	Indicator can best be collected through a household or individual survey.
Average weed management expenses per ton of weed harvested	
Change Description:	Change indicator baseline, historical, classification, level, primary source and responsible party

Project	**Environment and Natural Resources Management Project**							
Activity	**Weed and Sediment Management; Environment and Natural Resources Management**							
Sub Activity:	**N/A**							
Change	(1) Change baseline value from US$259,497 to US$34 (2) Change indicator classification from **Cumulative to level** in M&E Annex II (3) Change level from output to outcome (4) Change primary source to EGENCO Performance Monitoring Reports (5) Change responsible party to EGENCO (6) Change historical values as reflected below:							
	Baseline	**Oct-Dec 13**	**Jan-Mar 14**	**Apr-Jun 14**	**Jul-Sep 14**	**Oct-Dec 14**	**Jan-Mar 15**	**Apr-Jun 15**
Revised Value	$34	$0	$64	$13	$13	$593	$14	$32
	Jul-Sep 15	**Oct-Dec 15**	**Jan-Mar 16**	**Apr-Jun 16**	**Jul-Sep 16**	**Oct-Dec 16**	**Jan-Mar 17**	
Revised Value	$0	$0	$0	$26	$91	$0	$46	
Justification:	Baseline change Corrections to erroneous data							
Justification Description:	Old indicator calculations did not divide by the number of tons of weeds harvested. ESCOM submitted updated data which necessitated the change in baseline figure							
Amount of weed harvested at Liwonde barrage								
Change Description:	Change indicator level primary source and responsible party, and classification							
Change	(1) Change indicator level from output to outcome (2) Change indicator classification from cumulative to level (3) Change primary source indicator classification to EGENCO Performance Monitoring Reports (4) Change responsible party to EGENCO							
Justification:	Data source changed due to unbundling of ESCOM into two companies.							

Project	**Environment and Natural Resources Management Project**							
Activity	**Weed and Sediment Management; Environment and Natural Resources Management**							
Sub Activity:	**N/A**							
Justification Description	This will capture project level changes as a result of Weed and Sediment Management intervention							
Average sediment management expenses per ton of sediment harvested								
Change Description:	Change indicator baseline, update year 1&2 values, indicator classification, primary source and responsible party							
Change	(1) Change indicator name from **"Average sediment management expenses per ton of sediment harvested"** to **"Sediment management expenses"** (2) Change indicator baseline from $71,028 to $71,597 (3) Change indicator classification from Cumulative to Level in annex II of M&E Plan (4) Update year 1 and 2 values (5) Change indicator level from output to outcome primary source to EGENCO Performance Monitoring Reports (6) Change Responsible Party to EGENCO							
	Jul-Sep 13	**Oct-Dec 13**	**Jan-Mar 14**	**Apr-Jun 14**	**Jul-Sep 14**	**Oct-Dec 14**	**Jan-Mar 15**	**Apr-Jun 15**
Revised Value	$18,195	$25,329	$17,937	$40,170	$83,556	$63,596	$90,181	$76,153
	Jul-Sep 15	**Oct-Dec 15**	**Jan-Mar 16**	**Apr-Jun 16**	**Jul-Sep 16**	**Oct-Dec 16**	**Jan-Mar 17**	
Revised Value	$31,692	$19,922	$39,430	$73,959	$127,543	$233,424	$84,263	
Justification:	(1) Baseline change (2) Correction to erroneous data							
Justification Description:	(3) Data collected does not match the way indicator is calculated. No data on tonnes of sediment harvested. (4) Change based on actual and updated data from ESCOM. Since this is an average, the classification should be "Level" rather than "Cumulative"							
Percentage of head pond available								
Change Description:	Retire indicator							
Change	Retire indicator from the M&E Plan							

Project	**Environment and Natural Resources Management Project**
Activity	**Weed and Sediment Management; Environment and Natural Resources Management**
Sub Activity:	**N/A**
Justification:	Cost of data collection for indicator outweighs usefulness
Justification Description:	Data cannot be provided because EGENCO does not have the equipment to collect this data
WSM Equipment Purchased	
Change Description:	Add new output indicator and targets
Change	-Suggested definition is "**number of WSM equipment purchased and delivered through the Compact**" (disaggregated by equipment type i.e. dredgers, harvesters, trucks, conveyor) Indicator should be classified as "cumulative" -Set targets for 2018 as follows (2 dredgers, 2 harvesters, 2 trucks & 1 conveyor
Justification:	New issues emerged, suggesting importance of a new indicator
Operational Payment for Ecosystem Services mechanism established	
Change Description:	Change Indicator name, frequency of reporting, indicator definition, and delete baseline value
Change	Change indicator name to "**Establishment of a Shire River Basin Environmental Trust"** defined as "**Legal institution registered with the General Registry office with bylaws establishing a mechanism to support land management activities in the Shire River Basin**" Change frequency of reporting from quarterly to once Delete the baseline zero since this is a date indicator Add 31st December 2016 as the target
Justification:	Existing indicators do not sufficiently meet adequacy criteria
Payment for Ecosystem Services established	
Change Description:	New indicator

Project	**Environment and Natural Resources Management Project**
Activity	**Weed and Sediment Management; Environment and Natural Resources Management**
Sub Activity:	**N/A**
Change	Add new output indicator defined as "**An MOU is signed with ESCOM establishing a Payment for Ecosystem Services levy as part of its tariff application**" **Unit of Measurement:** Date **Reporting Frequency:** Once **Primary Source:** MCA-MW ESPD Progress Reports **Responsible Party:** MCA-MW Add 30th June 2018 as the target
Justification:	New issues emerged, suggesting importance of a new indicator
Value of Payment for Ecosystem Services funds disbursed	
Change Description:	New indicator
Change	Add new output indicator defined as "**Value disbursed of total PES funds in support of land management activities in the Shire River Basin**" Add 0 as the baseline value **Unit of Measurement:** USD **Reporting Frequency:** Quarterly **Primary Source:** MCA-MW ESPD Progress Reports **Responsible Party:** MCA-MW
Justification:	New issues emerged, suggesting importance of a new indicator
Dredged material placement area constructed at Kapichira	
Change Description:	New indicator
Change	Add new output indicator defined as "**The date by which the DMPA is ready for sediment inflow**" **Year 5 Target: 31st May 2017** **Unit of Measurement:** Date **Reporting Frequency:** Once

Project	**Environment and Natural Resources Management Project**
Activity	**Weed and Sediment Management; Environment and Natural Resources Management**
Sub Activity:	**N/A**
	Primary Source: MCA-MW **Responsible Party:** MCA-MW
Justification:	New issues emerged, suggesting importance of a new indicator
Grant agreements in place with civil society and private sector service providers	
Change Description:	(1) Change indicator classification from Level to Cumulative (2) Update Q9 value (3) Add 11 as target for all years from 2016 and end of Compact
Change	Change Indicator Classification from level to cumulative and change Q9 value from 2 to 11
Justification:	Work Plan Update
Justification description	This could be reported better by tracking increase in grants agreement based on the addition to the existing agreements
Number of feeding scars on sampled water hyacinth colonies	
Change Description:	Retire indicator
Change	Retire this indicator from the M&E Plan
Justification:	Irrelevant due to change in Program, Project or Activity scope
Plan for sustainability of the payment for ecosystem services mechanism	
Change Description:	Retire indicator
Change	Retire this indicator from the M&E Plan
Justification:	Indicator quality is determined poorer than initially thought when included in plan

Project	**Environment and Natural Resources Management Project**
Activity	**Weed and Sediment Management; Environment and Natural Resources Management**
Sub Activity:	**N/A**
Community members engaged in on-going community level dialogues	
Change Description:	Revise indicator name and classification, add yearly targets
Change	Change indicator name to **"Community members engaged in ongoing community level dialogues out of total community members in identified areas"** Change indicator classification from **"level to cumulative"** Add years targets as follows: FY2016-11,995 (4,196 males & 7,799 females); FY2017-23,300 (8,449males & 14,851females) and FY2018-24,980 (9,287 males & 15,693 females)
Justification:	TBD replaced with targets
Justification Description:	Change suggested by CRISIL during the second option DQA. This should reflect the number of members who actually spoken on the issue or raised questions during the community deliberation or dialogue. Target data provided by ENRM_SGEF Grantees
Leaders trained on social/gender/natural resource management issues (disaggregated by gender)	
Change Description:	Revise indicator name, classification (including gender disaggregated indicators) and yearly targets
Change	(1) Change indicator classification in the ITT from level to cumulative (2) Change indicator name to leaders trained on social/gender/natural resource management issues out of total leaders in identified areas (3) Add years targets as follows: FY2016-2,484 (1,179 males & 1,305 females); FY2017-4,773 (2,241males & 2,532females) and FY2018-6,073 (2,891 males & 3,182 females)
Justification:	TBD replaced with targets
Justification Description:	MCC Common Indicators in other sectors that involve the stakeholders trained are prescribed as "Cumulative." Indicator name suggested by CRISIL during the second option DQA. Targets provided by ENRM_SGEF Grantees

Project	**Environment and Natural Resources Management Project**
Activity	**Weed and Sediment Management; Environment and Natural Resources Management**
Sub Activity:	**N/A**
Women provided with leadership training	
Change Description:	Change indicator name in Annex II, classification and add yearly targets and baseline
Change	(1) Change indicator name in Annex II from "**Women enrolled in leadership training**" to "**Women provided with leadership training**" (2) Change indicator classification from level to cumulative (3) Add years targets as follows: FY2016-1,285; FY2017-2,167 and FY2018-2,787 (4) Add a baseline of zero
Justification:	Work Plan Update from ENRM_SGEF interventions TBD replaced with targets
Justification Description:	Targets provided by ENRM_SGEF Grantees Number of people trained increase from quarter to quarter
Women members of community/village level committees	
Change Description:	Change indicator name in MIS, Annexes I and II of the M&E Plan, and add yearly targets
Change	(1) Change indicator name from "**Women members of community/village level committees"** to "**Women and Men who are members of community/village level committees"** (disaggregated by sex) (2) Add years targets as follows: FY2016-3,915 (2,151 males & 1,764 females); FY2017-7,760 (3,806males & 3,954females) and FY2018-8560 (4,206 males & 4,354 females)
Justification:	Work Plan Update TBD replaced with targets
Justification Description:	This will ably capture the extent of women representation in these committees in comparison to Men's representation
Trees Planted	
Change Description:	Add new process indicator, baseline, indicator targets, unit of measurement, frequency of reporting, primary source, responsible party, rationale Add new output indicator

Project	**Environment and Natural Resources Management Project**
Activity	**Weed and Sediment Management; Environment and Natural Resources Management**
Sub Activity:	**N/A**
Change	(1) New indicator suggested by CRISIL during the second option DQA defined as "**number of trees planted**" (2) Indicate baseline as zero, and targets as 1,341,867 (FY 2015/16); 2,984,751 (FY 2016/17) & 4,451,618 (FY 2017/18) (3) Frequency of reporting should be quarterly (4) Primary source should be grants monitoring reports and responsible party should be MCA-Malawi Rationale: to measure progress on agroforestry activities
Justification:	New issues emerged, suggesting importance of a new indicator
Justification Description	The indicator will be used to measure progress on agroforestry activities
Trees Survived	
Change Description:	Add new process indicator, baseline, indicator targets, unit of measurement, frequency of reporting, primary source, responsible party, rationale Add new outcome indicator
Change	1) New indicator suggested by CRISIL during the second option DQA defined as "**Number of trees that have survived in each quarter after being planted**" 2) Indicate baseline as zero, and targets as 1,092,480 (FY 2015/16); 1,680,993(FY 2016/17) & 2,868,473 (FY 2017/18 3) Frequency of reporting should be quarterly 4) Primary source should be grants monitoring reports and responsible party should be MCA-Malawi Rationale: to measure progress on agroforestry activities
Justification:	New issues emerged, suggesting importance of a new indicator
Justification Description	The indicator will be used to measure progress on agroforestry activities

Project	**Environment and Natural Resources Management Project**
Activity	**Weed and Sediment Management; Environment and Natural Resources Management**
Sub Activity:	**N/A**
REFLECT/Reflection-Action Circles established and operational	
Change Description:	Add new output indicator,
Change	New indicator suggested by CRISIL during the second option DQA defined as "**Number of REFLECT/Reflection-Action Circles that have been formed through project and are operational**" Add 0 as the baseline value and 312 as year 5 target
Justification:	New issues emerged, suggesting importance of a new indicator
Justification Description	The indicator will be used to measure progress on agroforestry activities
Members of established REFLECT/Reflection-Action Circles	
Change Description:	Add new output indicator,
Change	New indicator suggested by CRISIL during the second option DQA defined as "**Number of members enrolled and participating in Reflect/reflection-action circles'"** disaggregated by gender. Add 0 as the baseline and 6,761 (1676 males & 5,085 females)
Justification:	New issues emerged, suggesting importance of a new indicator
VSLs established and Operational	
Change Description:	Add new process indicator
Change	New indicator suggested by CRISIL during the second option DQA defined as "'**Total number of VSL groups formed and their members contribute funds and obtain loans**''. 1) Frequency of reporting should be annually 2) Primary source should be grants monitoring reports and responsible party should be MCA-Malawi

Project	**Environment and Natural Resources Management Project**
Activity	**Weed and Sediment Management; Environment and Natural Resources Management**
Sub Activity:	**N/A**
	3) Add 0 as the baseline value and 447 as the year 5 target
Justification:	New issues emerged, suggesting importance of a new indicator
Justification Description	The indicator will be used to measure progress on agroforestry activities
Members of established VSLs	
Change Description:	Add new output indicator
Change	New indicator suggested by CRISIL during the second option DQA defined as Number of members enrolled and participating in VSLs disaggregated by gender. 1) Frequency of reporting should be annually 2) Primary source should be grants monitoring reports and responsible party should be MCA-Malawi 3) Add 0 as the baseline value and 19245 (7,466 males & 11,799 females) as year 5 target
Justification:	New issues emerged, suggesting importance of a new indicator
Justification Description	The indicator will be used to measure progress on agroforestry activities
Temporary Employment Generated	
Change Description:	Change indicator classification
Change	Change indicator classification from “Level” to “Cumulative”
Justification:	Work plan update
Value of signed and disbursed contracts for ENRM_SGEF Project	
Change Description:	Change indicator classification, add year 5 targets and historical values

Project	**Environment and Natural Resources Management Project**							
Activity	**Weed and Sediment Management; Environment and Natural Resources Management**							
Sub Activity:	**N/A**							
Change	(1) Change indicator classification from level to cumulative (2) Add year 5 targets as follows: Percent disbursed of signed ENRM_SGA project contracts (100); Value of signed contracts for ENRM Project (US$27,885,000); Value disbursed of signed contracts for ENRM Project (US$27,885,000); (3) Change historical data as noted below							
	Jul-Sep 13	**Oct-Dec13**	**Jan- Mar14**	**Apr-Jun14**	**Jul-Sep 14**	**Oct-Dec 14**	**Jan-Mar 15**	**Apr-Jun 15**
% disbursed	0%	16%	22%	50%	66%	67%	82%	85%
Value signed	$0	$1,340,638	$1,383,025	$1,385,855	$1,483,901	$1,491,225	$1,585,206	$1,588,057
Value disbursed	$0	$213,866	$304,884	$688,932	$985,153	$995,972	$1,294,671	$1,348,924
	Jul-Sep 15	**Oct-Dec 15**	**Jan-Mar 16**	**Apr-Jun 16**	**Jul-Sep 16**	**Oct-Dec 16**	**Jan-Mar 17**	
% disbursed	34%	31%	32%	38%	22%	32%	69%	
Value signed	$6,684,025	$7,802,490	$10,736,464	$10,537,126	$20,603,716	$20,696,213	$28,793,177	
Value disbursed	$2,273,270	$2,380,889	$3,458,047	$3,998,003	$4,524,290	$6,646,589	$19,738,444	
Justification:	Correction to erroneous data							
Justification Description:	Historical values changed due to updated figures in SAP. On classification change, MCC Common Indicators in other sectors that involve the value of contracts signed/disbursed are prescribed as "Cumulative."							
Value of signed and disbursed Weed & Sediment Management Activity contracts								
Change Description:	Change indicator classification, Historical Values and add year 5 targets							
Change	(1) Change indicator classification from level to cumulative (2) Add year 5 targets as follows: Value of signed Weed & Sediment Management Activity contracts (US$15,885,000); Value disbursed of signed Weed & Sediment Management Activity contracts (US$15,885,000); (3) Change value historical values as stated below:							

Project	**Environment and Natural Resources Management Project**							
Activity	**Weed and Sediment Management; Environment and Natural Resources Management**							
Sub Activity:	**N/A**							
	Jul-Sep 13	**Oct-Dec13**	**Jan- Mar14**	**Apr-Jun14**	**Jul-Sep 14**	**Oct-Dec 14**	**Jan-Mar 15**	**Apr-Jun 15**
Value signed	$0	$436,308	$436,308	$436,308	$437,990	$445,314	$532,434	$532,451
Value disbursed	$0	$33,000	$33,000	$33,000	$34,682	$35,957	$242,436	$294,044
	Jul-Sep 15	**Oct-Dec 15**	**Jan-Mar 16**	**Apr-Jun 16**	**Jul-Sep 16**	**Oct-Dec 16**	**Jan-Mar 17**	
Value signed	$532,451	$526,773	$539,082	$541,648	$10,783,229	$10,785,341	$18,628,581	
Value disbursed	$475,548	$475,548	$480,343	$482,806	$534,782	$2,075,308	$14,104,137	
Justification:	Correction to erroneous data							
Justification Description:	Historical values changed due to updated figures in SAP. On classification change, MCC Common Indicators in other sectors that involve the value of contracts signed/disbursed are prescribed as "Cumulative."							
Value of signed and disbursed ENRMAP contracts								
Change Description:	Change indicator classification, add year five targets and change historical values							
Change	(1) Change indicator classification from level to cumulative (2) Value of signed ENRMAP contracts (US$10,000,000); Value of disbursed ENRMAP contracts (US$10,000,000); (US$2,0000,000) (3) Change historical data as noted below							
	Jul-Sep 13	**Oct-Dec13**	**Jan- Mar14**	**Apr-Jun14**	**Jul-Sep 14**	**Oct-Dec 14**	**Jan-Mar 15**	**Apr-Jun 15**
Value signed	$0	$904,330	$946,132	$948,962	$1,045,326	$1,045,326	$1,052,187	$1,054,510
Value disbursed	$0	$180,866	$271,299	$655,347	$949,886	$959,430	$1,051,650	$1,054,295
	Jul-Sep 15	**Oct-Dec 15**	**Jan-Mar 16**	**Apr-Jun 16**	**Jul-Sep 16**	**Oct-Dec 16**	**Jan-Mar 17**	
Value signed	$4,672,201	$5,412,391	$8,270,209	$7,988,608	$7,814,331	$7,865,169	$8,039,906	
Value disbursed	$1,663,660	$1,761,776	$2,570,221	$2,918,213	$3,292,749	$3,680,801	$4,460,418	
Justification:	Correction to erroneous data							

Project	**Environment and Natural Resources Management Project**							
Activity	**Weed and Sediment Management; Environment and Natural Resources Management**							
Sub Activity:	**N/A**							
Justification Description:	Historical values changed due to updated figures in SAP. On classification change, MCC Common Indicators in other sectors that involve the value of contracts signed/disbursed are prescribed as "Cumulative."							
Value of signed and disbursed SGEF Activity contracts								
Change Description:	Change indicator classification, add year 5 targets and change historical figures							
Change	(1) Change indicator classification from level to cumulative (2) Add year 5 targets as follows: Value of signed SGEF Activity contracts (US$2,000,000); Value of disbursed SGEF Activity contracts (US$2,0000,000) (3) Change historical data as noted below							
	Jul-Sep 13	**Oct-Dec13**	**Jan- Mar14**	**Apr-Jun14**	**Jul-Sep 14**	**Oct-Dec 14**	**Jan-Mar 15**	**Apr-Jun 15**
Value signed	$0	$0	$585	$585	$585	$585	$585	$1,097
Value disbursed	$0	$0	$585	$585	$585	$585	$585	$585
	Jul-Sep 15	**Oct-Dec 15**	**Jan-Mar 16**	**Apr-Jun 16**	**Jul-Sep 16**	**Oct-Dec 16**	**Jan-Mar 17**	
Value signed	$1,479,374	$1,863,327	$1,927,173	$2,006,870	$2,006,156	$2,045,704	$2,124,690	
Value disbursed	$134,062	$143,566	$407,482	$596,983	$696,760	$890,479	$1,173,888	
Justification:	Correction to erroneous data							
Justification Description:	Historical values changed due to updated figures in SAP. On classification change, MCC Common Indicators in other sectors that involve the value of contracts signed/disbursed are prescribed as "Cumulative".							

GOVERNMENT OF MALAWI

M&E Plan modification

Third Monitoring and Evaluation Plan Modifications Memo

Monitoring, Evaluation and Economics Department

Millennium Challenge Account – Malawi

P. O. Box 31513

Lilongwe

Malawi

March 2018

1. MCA-MALAWI M&E PLAN MODIFICATIONS

The MCA-Malawi M&E Plan was approved by MCA-Malawi Board of Trustees and MCC on September 13, 2013 and September 19, 2013 respectively. The M&E Plan documents the key performance indicators that will be used to measure progress on implementation of Compact interventions as well as evaluation criteria.

So far, the M&E Plan has undergone two modifications. The first modification of the M&E Plan was done during the period March-June 2015 and was approved by MCA-Malawi Board and MCC in September 2015. This modification was based on modifications to a number of indicators that were proposed by CRISIL Risk and Infrastructure Solutions Limited (CRIS), during the comprehensive data quality review assignment carried for a period of six months – September 2013 to March 2014.

The second modification was done during the period March-July 2017 and was approved by MCA-Malawi Board and MCC in September 2017. This modification was based on changes made to the agreed Compact indicators that occurred between the period when the first modification to M&E Plan was approved in September 2015 and finalization of the second Data Quality Audit in June 2016 conducted by CRISIL Risk and Infrastructure Solutions Limited (CRIS). MCA-Malawi engaged CRISIL Risk and Infrastructure Solutions Limited (CRIS), to conduct annual Data Quality Audits (DQAs) through the years 2015 to 2018. The DQAs aim to evaluate the reliability, validity and accuracy of data reported to MCC, MCA-Malawi, Government of Malawi and other stakeholders in order to improve the quality of data gathering and report efforts.

The purpose of this memo, therefore, is to document a few changes to Compact indicators that have occurred after approval of the second modification to M&E Plan in September 2017. These changes include the following:

A. Policy and Structural Changes

1. No changes will be effected

B. Results Statements and Compact Benefits.

1. No changes will be effected.

C. Indicators and Targets

1. Revision to indicator disaggregation, classification and measurement.
2. Modifications to target values due to revised data.
3. Modifications to historical values due to revised data.

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Table 1: Compact Goal and Objective Level Indicator Changes

Program:	**Compact Goal and Objective Level Indicators**
Activity:	**N/A**
Sub-Activity:	**N/A**
Annual real per capita income	
Change Description:	Change unit
Change	Change unit from US$/person to US$
Justification:	Changing to an approved MIS unit

Program:	**Compact Goal and Objective Level Indicators**
Activity:	**N/A**
Sub-Activity:	**N/A**
Customers connected to the grid	
Change Description:	Change frequency of reporting
Change	Change frequency of reporting from “Annual” to “Quarterly”
Justification:	Work Plan update

Program:	**Compact Goal and Objective Level Indicators**

Activity:	**N/A**
Sub-Activity:	**N/A**
Electric Power Consumption per capita	
Change Description:	Change unit
Change	Change unit from kWh/person to kWh
Justification:	Changing to an approved MIS unit

Program:	**Compact Goal and Objective Level Indicators**
Activity:	**N/A**
Sub-Activity:	**N/A**
Investment in Power Sub-Sector total USD million committed by financial close	
Change Description:	Change unit
Change	Change unit from US$ million to US Million
Justification:	Changing to an approved MIS unit

Program:	**Compact Goal and Objective Level Indicators**
Activity:	**N/A**
Sub-Activity:	**N/A**

Program:	**Compact Goal and Objective Level Indicators**
Activity:	**N/A**
Sub-Activity:	**N/A**
Total Electricity Supply	
Change Description:	Update classification
Change	Change from level to level (cumulative)
Justification:	Aligning with common indicator guidance

Program:	**Compact Goal and Objective Level Indicators**
Activity:	**N/A**
Sub-Activity:	**N/A**
Total Electricity Sold	
Change Description:	Update classification
Change	Change from level to level (cumulative)
Justification:	Aligning with common indicator guidance

Table 2: Infrastructure Development Project Indicators

Project:	**Infrastructure Development Project (IDP)**				
Sub-Activity:	**N/A**				
Transmission System technical losses					
Change Description:	Revision to historical data				
Change	**Compact Year 4**	**Jul-Sep 16**	**Oct-Dec 16**	**Jan-Mar 17**	**Apr-Jun 17**
Original Value	5.84	5.73	5.72	5.87	6.02
Revised Value	5.71	5.59	5.58	5.74	5.90
Justification:	Corrections to erroneous data				
Justification Description	The new formula as per the latest M&E plan was not used for the computation of the indicator.				
Distribution System losses (Technical & Non-Technical)					
Change Description:	Revision to historical data				
Change	**Compact Year 4**	**Jul-Sep 16**	**Oct-Dec 16**	**Jan-Mar 17**	**Apr-Jun 17**
Original Value	14.43	11.28	12.94	14.87	18.27
Revised value	14.46	11.31	12.97	14.91	18.28

Project:	**Infrastructure Development Project (IDP)**			
Sub-Activity:	**N/A**			
Justification:	Corrections to erroneous data			
Justification Description	The new formula as per the latest M&E plan was not used for the computation of the indicator.			
Average Frequency of forced outages/interruptions				
Change Description:	Revision to historical data			
Change	**Compact Year 4**	**Jul-Sep 16**	**Oct-Dec 16**	**Jan-Mar 17**
Original Value	2.08	1.54	2.65	2.71
Revised Value	1.88	1.32	2.27	2.45
Justification:	Corrections to erroneous data			
Justification Description	The values of installed KVA in the ITT do not match with the values of installed KVA in the latest source file			
Total system load shed				
Change Description:	Revision to historical data			
Change	Revise historical data as follows: (1) Compact year 4: from 86,988 to 90,109 (2) Jul-Sep 16: from 22,248 to 25,369			

Project:	**Infrastructure Development Project (IDP)**
Sub-Activity:	**N/A**
Justification:	Corrections to erroneous data
Justification Description	The value of total MWh shed in ITT for the month of Aug 2016 is different than that value of total MWh shed in the latest source file for load shedding named "Dist. MERA LOADSHEDDING 16-17.xlsx" for the month of June 2017
Generation capacity added	
Change Description:	Revise the level of disaggregation by combining the different levels of disaggregation in Annex 2
Change	Combine the different levels of disaggregation as follows: On-grid renewable, Off-grid renewable; and On-grid Thermal, Off-grid Thermal
Justification:	Work Plan update
Kilometers of transmission lines upgraded or built	
Change Description:	Change year 5/EOC Target
Change	Change target from 409 km to 367 km
Justification:	Work Plan update
Kilometers of transmission lines upgraded or built-New 132-kV lines built	
Change Description:	Change year 5/EOC Target

Project:	**Infrastructure Development Project (IDP)**
Sub-Activity:	**N/A**
Change	Change target from 133 km to 160 km
Justification:	Work Plan update
Kilometers of transmission lines upgraded or built-New 66-kV lines built	
Change Description:	Change year 5/EOC Target
Change	Change target from 103 km to 34 km
Justification:	Work Plan update
Transmission substation capacity added	
Change Description:	Change year 5/EOC Target
Change	Change target from 670 MVA to 809 MVA
Justification:	Work Plan update
Kilometres of distribution lines upgraded or built	
Change Description:	Change year 5/EOC Target

Project:	**Infrastructure Development Project (IDP)**
Sub-Activity:	**N/A**
Change	Change target from 37 km to 42 km
Justification:	Work Plan update
Km of New MCC Distribution Cables	
Change Description:	Change year 5/EOC Target
Change	Change target from 29 km to 3 km
Justification:	Work Plan update
Distribution substation capacity added by Compact	
Change Description:	Change year 5/EOC Target
Change	Change target from 74 MVA to 97 MVA
Justification:	Work Plan update
Value disbursed of power infrastructure feasibility and design contracts	
Change Description:	Change indicator name Change definition

Project:	**Infrastructure Development Project (IDP)**							
Sub-Activity:	**N/A**							
Change	Change indicator name from "**Value disbursed of signed power infrastructure feasibility and design contracts"** to **"Value disbursed of power infrastructure feasibility and design contracts"** Change definition from **"The value disbursed of all signed feasibility, design, and environmental contracts, including resettlement action plans for power infrastructure investments using 609(g) and compact funds"** to **"The amount disbursed of all signed feasibility, design, and environmental impact assessment contracts, including resettlement action plans, for power infrastructure using 609(g) and compact funds."**							
Justification:	Alignment with common indicator guidance							
Value disbursed of power infrastructure construction contracts								
Change Description:	Change indicator name							
Change	Change indicator name from "**Value disbursed of signed power infrastructure construction contracts"** to **"Value disbursed of power infrastructure construction contracts"** Change definition from **"The value disbursed of all signed construction contracts for power infrastructure investments using compact funds"** to **"The amount disbursed of all signed construction contracts for power infrastructure investments using compact funds"**							
Justification:	Alignment with the common indicator guidance							
Percent disbursed of power infrastructure feasibility and design contracts								
Change Description:	Change historical figures							
Change	Change historical values after moving RAP development and implementation figures from power infrastructure construction contracts to power infrastructure feasibility and design contracts							
	Jul-Sep 14	**Oct-Dec 14**	**Jan-Mar 15**	**Apr-Jun 15**	**Jul-Sep 15**	**Oct-Dec 15**	**Jan-Mar 16**	**Apr-Jun 16**
% disbursed	49%	70%	77%	87%	93%	73%	77%	84%
Value signed	$7,977,991	$7,979,021	$8,252,888	$8,290,114	$8,527,078	$11,511,997	$11,772,941	$11,773,338

Project:	**Infrastructure Development Project (IDP)**							
Sub-Activity:	**N/A**							
Value disbursed	$3,890,091	$5,623,598	$6,338,889	$7,232,526	$7,912,779	$8,403,477	$9,090,687	$9,855,163
	Jul-Sep 16	**Oct-Dec 16**	**Jan-Mar 17**	**Apr-Jun 17**				
% disbursed	62%	66%	70%	73%				
Value signed	$17,459,937	$18,347,137	$18,439,241	$18,512,720				
Value disbursed	$10,805,689	$12,101,752	$12,846,195	$13,463,392				
Justification:	Corrections to erroneous data							
Percent disbursed of power infrastructure construction contracts								
Change Description:	Change historical figures Change classification							
Change	Change historical values after moving RAP development and implementation figures from power infrastructure construction contracts to power infrastructure feasibility and design contracts Change classification from Cumulative to Level							
	Jul-Sep 14	**Oct-Dec 14**	**Jan-Mar 15**	**Apr-Jun 15**	**Jul-Sep 15**	**Oct-Dec 15**	**Jan-Mar 16**	**Apr-Jun 16**
% disbursed	0%	0%	0%	1%	3%	14%	16%	20%
Value signed	$36	$18,756,281	$18,770,151	$18,806,363	$155,472,585	$164,506,174	$181,200,602	$195,501,099
Value disbursed	$0	$2,471	$39,083	$180,841	$4,122,791	$22,552,785	$28,936,309	$39,311,283
	Jul-Sep 16	**Oct-Dec 16**	**Jan-Mar 17**	**Apr-Jun 17**				
% disbursed	24%	29%	34%	42%				
Value signed	$199,701,531	$202,605,129	$209,088,872	$225,630,040				
Value disbursed	$48,058,805	$58,190,310	$71,962,612	$95,325,325				
Justification:	Corrections to erroneous data Align with common indicator guidance							

Project:	**Infrastructure Development Project (IDP)**							
Sub-Activity:	**N/A**							
Value of signed and disbursed Transmission Network Upgrade Activity construction contracts								
Change	Change historical figures							
Change Description:	Change historical values after moving RAP development and implementation figures from power infrastructure construction contracts to power infrastructure feasibility and design contracts							
	Jul-Sep 14	**Oct-Dec 14**	**Jan-Mar 15**	**Apr-Jun 15**	**Jul-Sep 15**	**Oct-Dec 15**	**Jan-Mar 16**	**Apr-Jun 16**
Value signed	-$3	$9,331,017	$9,168,457	$9,171,570	$112,990,072	$114,479,608	$119,739,690	$123,725,388
Value disbursed			$22,298	$35,464	$1,810,036	$18,512,183	$20,029,798	$28,117,628
	Jul-Sep 16	**Oct-Dec 16**	**Jan-Mar 17**	**Apr-Jun 17**				
Value signed	$123,908,883	$126,543,042	$131,304,677	$131,203,877				
Value disbursed	$31,580,589	$40,148,613	$52,525,030	$65,255,386				
Justification:	Corrections to erroneous data							
Value of signed and disbursed T&D Upgrade Activity construction contracts								
Change	Change historical figures							
Change Description:	Change historical values after moving RAP development and implementation figures from power infrastructure construction contracts to power infrastructure feasibility and design contracts							
	Jul-Sep 14	**Oct-Dec 14**	**Jan-Mar 15**	**Apr-Jun 15**	**Jul-Sep 15**	**Oct-Dec 15**	**Jan-Mar 16**	**Apr-Jun 16**
Value signed	-$62	$6,578,086	$6,741,629	$6,761,564	$6,760,140	$14,298,489	$25,730,871	$35,856,714
Value disbursed		$2,471	$15,511	$137,823	$1,611,942	$3,180,116	$3,437,510	$5,542,273
	Jul-Sep 16	**Oct-Dec 16**	**Jan-Mar 17**	**Apr-Jun 17**				
Value signed	$39,731,574	$39,999,513	$41,291,239	$46,190,981				
Value disbursed	$10,447,225	$11,756,693	$12,919,007	$15,827,650				
Justification:	Corrections to erroneous data							

Project:	**Infrastructure Development Project (IDP)**
Sub-Activity:	**N/A**
Justification Description:	Project team updated figures in the SAP which necessitated the revisions in the ITT

Table 3: Power Sector Reform Indicators

Project	**Power Sector Reform Project (PSRP)**
Activity	**ESCOM Turnaround; Regulatory Strengthening**
Sub Activity:	**N/A**
Average cost of electricity billed (US$/kWh)	
Change	Modify unit of measurement and classification
Change Description:	Unit of measurement from US$/kWh to US$ Change indicator classification from "Level" to "Level-Average"
Justification:	Work plan update
Cost-reflective tariff regime	
Change	(1) Add year 5 target for **Cost-Reflective Regime**
Change Description:	(1) Add year 5 target for **Cost-reflective tariff regime** as 100%. (2) Shade in baseline through year 4 for targets for **Long-run marginal cost per kilowatt-hour of electricity supplied to customers**
Justification:	Update based on required target of 100% cost-recovery levels for tariff as required under the Compact. Final targets for Average tariff per KWh to be incorporated in May 2018 based on final Cost of Service Study.
Operating cost-recovery ratio (based on operating expenses)	
Change Description:	Revision to historical value
Change	Change Compact year 4 value from 88.04% to 88.23%
Justification:	Corrections to erroneous data

Project	**Power Sector Reform Project (PSRP)**
Activity	**ESCOM Turnaround; Regulatory Strengthening**
Sub Activity:	**N/A**
Justification Description	The values for operating expenses in the ITT do not match with the values in the latest DFM.
Operating cost-recovery ratio (based on operating expenses + Depreciation)	
Change Description:	Revision to historical value
Change	Change Compact year 4 value from 85.10% to 85.27%
Justification:	Corrections to erroneous data
Justification Description	The values for operating expenses in the ITT do not match with the values in the latest DFM.
Operating cost-recovery ratio - based on operating expenses + depreciation + return (weighted average cost of capital (WACC) X rate base)	
Change Description:	Revision to historical value
Change	Change Compact year 4 value from 66.44%to 66.55%
Justification:	Corrections to erroneous data
Justification Description	The values for operating expenses in the ITT do not match with the values in the latest DFM.
Current Ratio	
Change	Modify indicator target and historical values

Project	**Power Sector Reform Project (PSRP)**
Activity	**ESCOM Turnaround; Regulatory Strengthening**
Sub Activity:	**N/A**
Change Description:	Modify indicator target from **2-4** to **3** Change historical values as follows: Jul-Sep 16: from 3.51 to 3.49 Oct-Dec 16: from 3.45 to 3.40
Justification:	Work plan update and correction to erroneous data
Justification Description	The values of current assets and current liabilities for Q1 and Q2 of FY17 are different in the latest DFM than the values hard punched in the ITT
Average Collection Period in days (Annual)	
Change	Change historical values
Change Description:	Change Compact year 4 value from 109 to 88
Justification:	Correction to erroneous data
Justification Description	The values for the total post-paid sales for the Q3 and Q4 for FY17 were not multiplied by 1000 while linking with the source file as the scale of the unit was different in the ITT
Average Collection Period in days (Quarterly)	
Change	Change historical values Change frequency of reporting
Change Description:	Change historical values as follows: Apr-Jun 17: from 166 to 99 Change frequency of reporting from Annual to Quarterly
Justification:	Correction to erroneous data based on Data Quality Audit Report.

Project	**Power Sector Reform Project (PSRP)**
Activity	**ESCOM Turnaround; Regulatory Strengthening**
Sub Activity:	**N/A**
Justification Description	The values for the total post-paid sales for the Q3 and Q4 for FY17 were not multiplied by 1000 while linking with the source file as the scale of the unit was different in the ITT
Bad Debt	
Change	Change indicator Definition
Change Description:	Change indicator definition from "Total value of accounts receivables over 90 days/Total accounts receivable" to "Total value of accounts receivables over 180 days/Total accounts receivable"
Justification:	Work Plan update
ESCOM Maintenance Expenditures ratio to planned maintenance budget	
Change	Change historical values
Change Description:	Change historical values as follows: Compact Year 4: from 47.78% to 47.22% Jul-Sep 16: from 66.98% to 66.81% Oct-Dec 16: from 70.14% to 68.17%
Justification:	Correction to erroneous data
Justification Description	The values of annual maintenance expenses for Q1 and Q2 of FY17 are different in the latest DFM than the values hard punched in the ITT
Number of ESCOM and EGENCO employees who participate in gender trainings	
Change Description:	Add year 5/EOC targets

Project	**Power Sector Reform Project (PSRP)**
Activity	**ESCOM Turnaround; Regulatory Strengthening**
Sub Activity:	**N/A**
Change	Add year 5/EOC targets 2,500 staff trained
Justification:	TBD replaced with targets

Table 4: Environment and Natural Resources Management Project

Project	**Environment and Natural Resources Management Project**							
Activity	**Weed and Sediment Management; Environment and Natural Resources Management**							
Sub Activity:	**N/A**							
Water turbidity								
Change Description:	Add two separate indicators Modify indicator classification Change unit measurement in Annex 1 Add historical data							
Change	Add two separate indicator for "Liwonde and Nkula" Modify indicator classification from "Level" to "Level-Average" Change Unit of measurement in Annex 1 from Total Suspended Solids (SSS) to "Mg/L Add historical data as follows							
	Baseline	**Oct-Dec 13**	**Jan-Mar 14**	**Apr-Jun 14**	**Jul-Sep 14**	**Oct-Dec 14**	**Jan-Mar 15**	**Apr-Jun 15**
Water Turbidity-Liwonde	96.6	191.6	169.3	19.5	22.9	131.1	259.7	18.0
Water Turbidity-Nkula	522.2	310.0	2538.7	76.0	51.7	239.7	4189.3	313.0
	Jul-Sep 15	**Oct-Dec 15**	**Jan-Mar 16**	**Apr-Jun 16**	**Jul-Sep 16**	**Oct-Dec 16**	**Jan-Mar 17**	**Apr-Jun 17**
Water Turbidity-Liwonde	24.0	150.0	261.0	18.7	16.6	113.0	280.3	19.9
Water Turbidity-Nkula	241.0	1661.7	3870.7	260.7	226.0	1881.0	10227.7	1899.3
Justification:	Work Plan update							
Average weed management expenses per ton of weed harvested								
Change	Change historical values							

Project	**Environment and Natural Resources Management Project**
Activity	**Weed and Sediment Management; Environment and Natural Resources Management**
Sub Activity:	**N/A**
Change Description:	Change historical values as follows: Compact Year 4: from 31.48 to 31.40
Justification:	Correction to erroneous data
Justification Description	The exchange rate hard punched in ITT for the months of Q1 and Q2 of the FY17 are different than the values in the latest source file
Sediment management expenses	
Change	Change historical values
Change Description:	Change historical values as follows: Compact Year 4: from 509,209 to 508,043 Jul-Sep 16: from 127,543 to 126,964 Oct-Dec 16: from 233,424 to 232,338
Justification:	Correction to erroneous data
Justification Description	The exchange rate hard punched for the months of Q1 and Q2 of the FY17 are different in the latest source file.
Temporary Employment Generated	
Change Description:	Retire this indicator
Change	Retire the indicator in the M&E Plan
Justification	Irrelevant due to change in Program, Project or Activity scope