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.

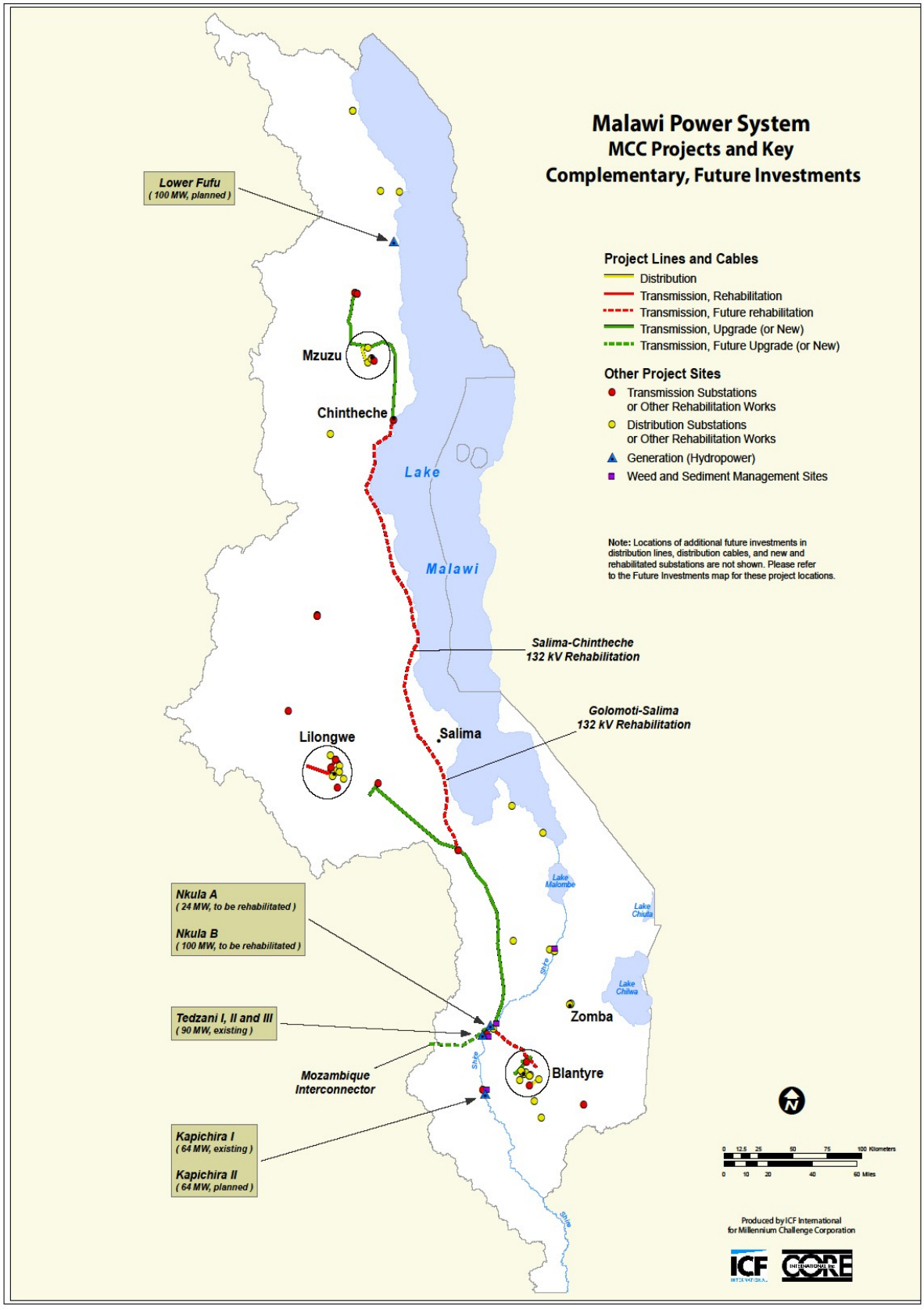


Figure 1: Malawi Compact Project Sites

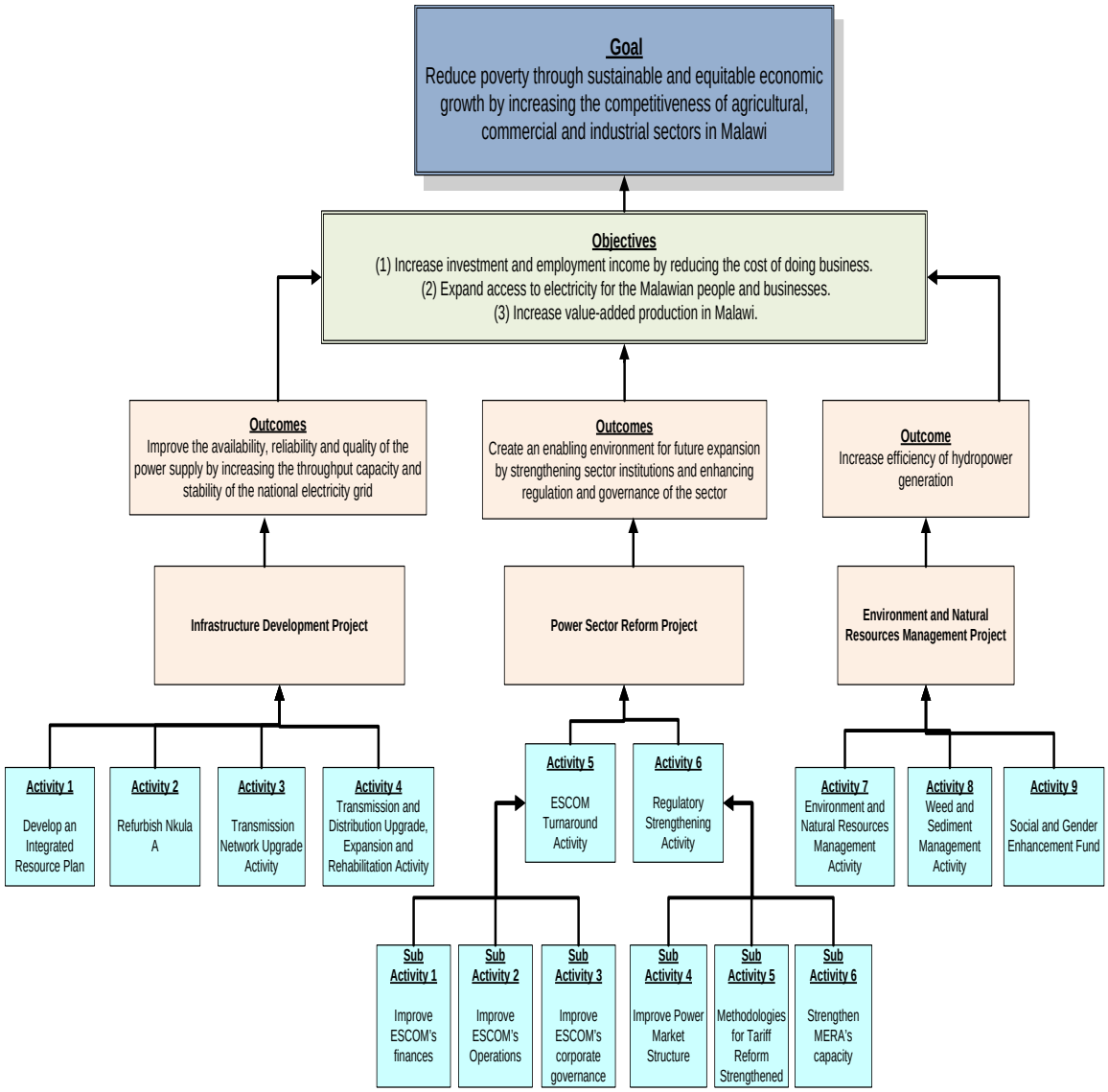


Figure 2: Compact Structure and Objectives

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.

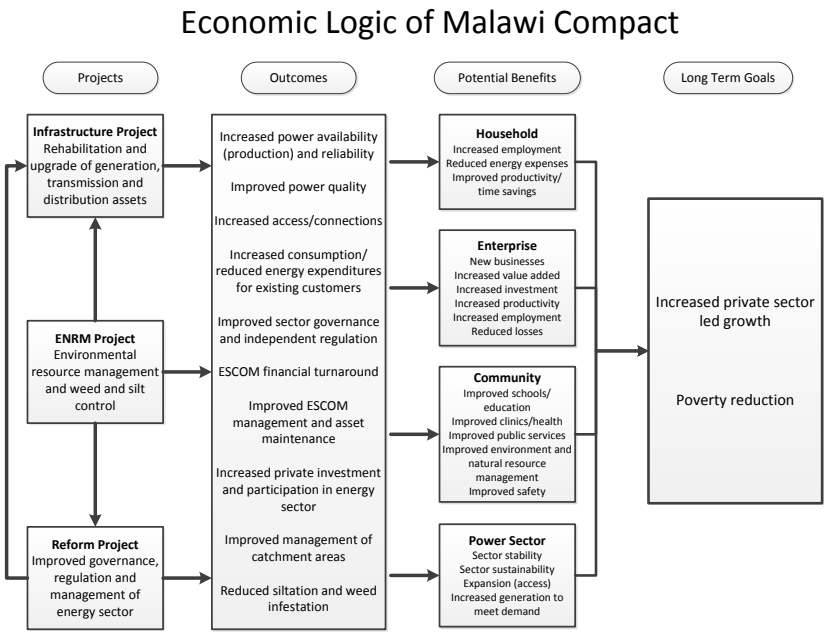


Figure 3: Economic Logic of Malawi Compact

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.	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.
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	

[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.	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
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	

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.

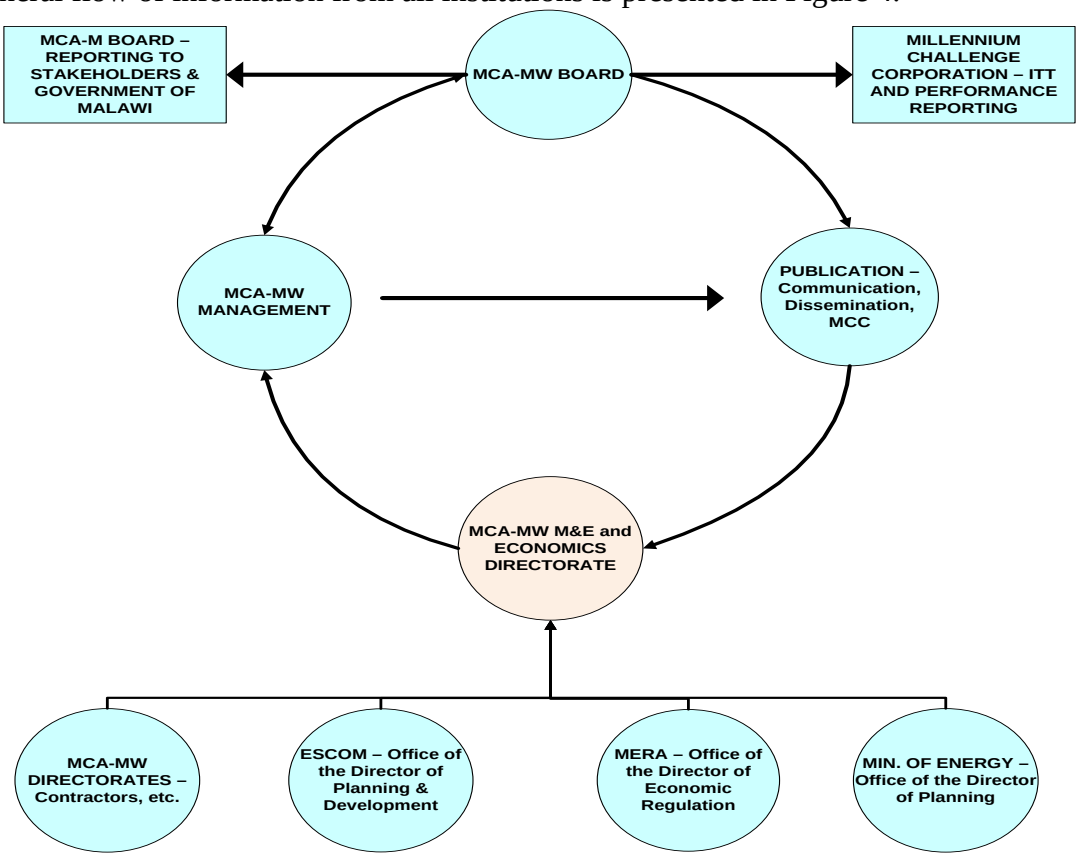


Figure 4: General Information Flow from Compact Project Partners

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.

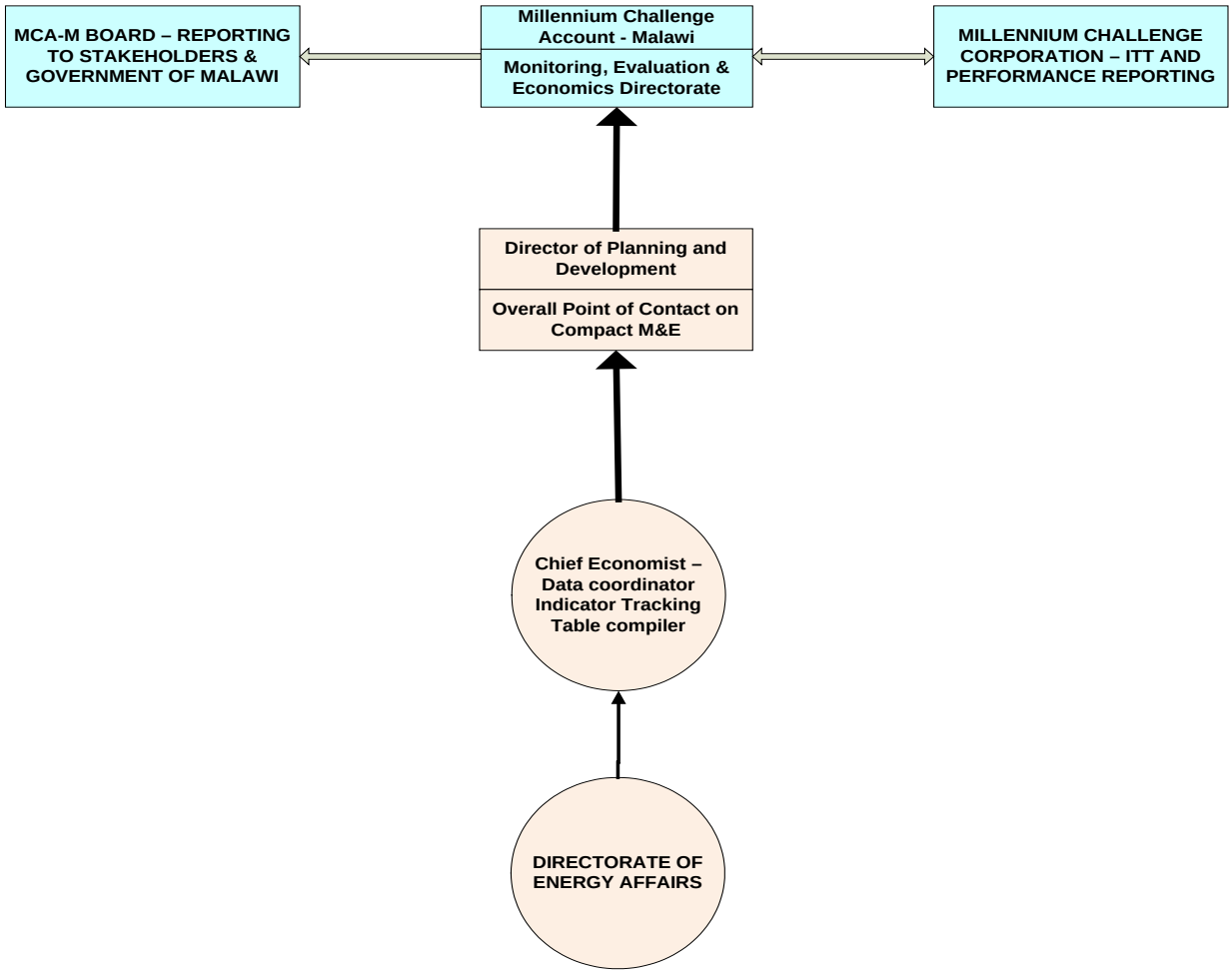
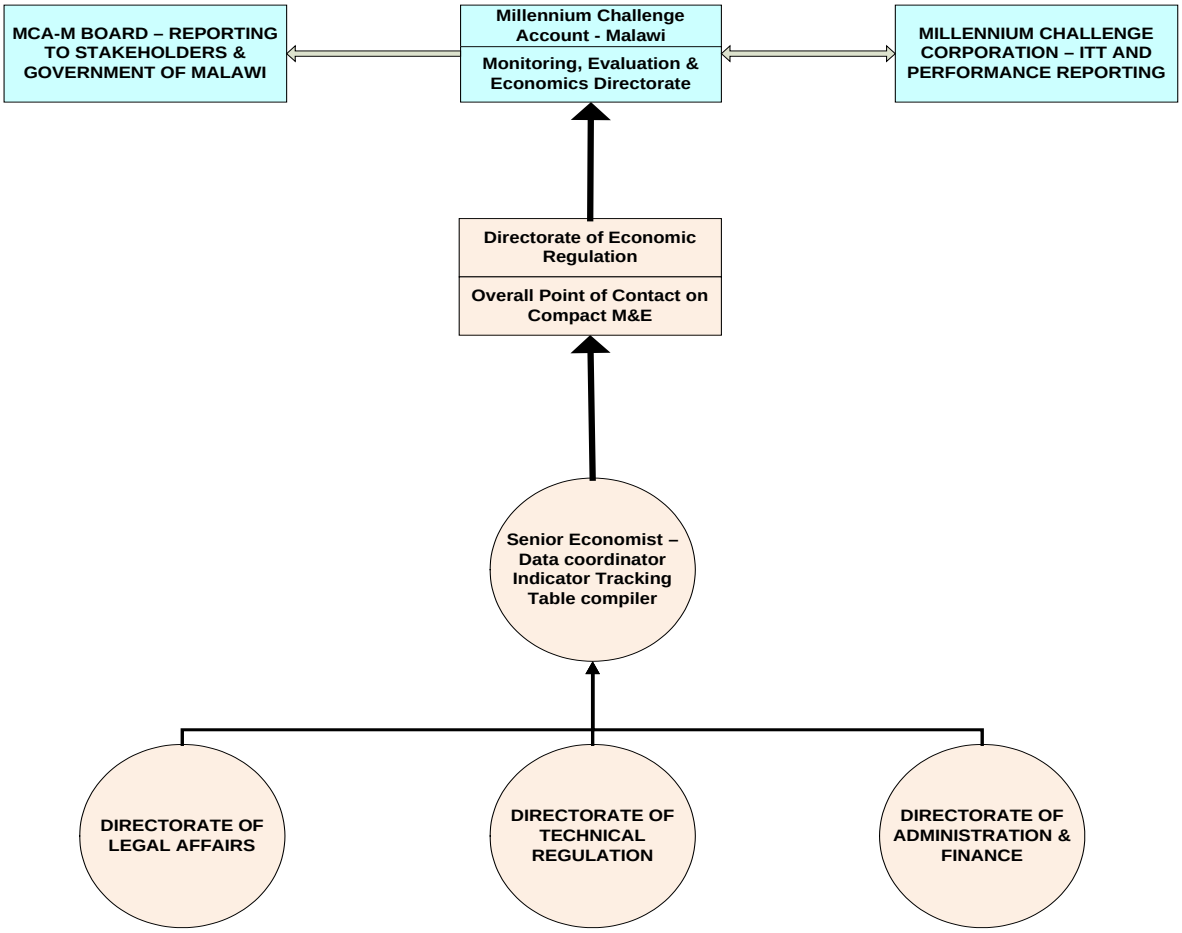


Figure 5: Ministry of Energy Data Flow Diagram

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					
	2012				2013				2014				2015				2016					
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q5	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q
g																						
Plan Development Process			■	■																		
keholder Consultations			■					■				■				■				■		
pdate Annual Work Plan			■	■				■				■				■				■		
proval				■																		
Data Collection and Finalization				■																		
Reviews						■		■		■		■		■		■		■		■		■
ity Monitoring Plans					■	■																
Launch procurement for MIS					■																	
erly Narrative Reports					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
e Out Plan					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Compact M&E Plan					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
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ining on MCC M&E					■					■				■				■			■	
&E Focal Points from Implementing Partners						■				■				■				■				
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rchase and independent monitoring					■																	
censing					■																	
			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
analyze data for indicators			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
f indicator tracking table			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
ted Household Survey													■	■	■	■						
usehold Panel Survey						■	■															■
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Five Year M&E Work Plan

	CIF				Year 1				Year 2				Year 3				Year 4					
	2012				2013				2014				2015				2016					
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q5	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q
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9. ANNEXES

ANNEX I – INDICATOR DOCUMENTATION TABLE

Annex I: Indicator Definition Table										
Results Statement	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Methodology	Rationale or Justification for Measurement
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	Survey	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	Survey	Indicator to measure progress towards Compact goal and MCC mission.
	Goal	Manufacturing and industry output growth rate	Growth rate of manufacturing and industry output	%		Malawi Annual Economic Reports	Ministry of Economic Planning and Development	Annual	Survey	Proxy measure for progress on goal, as defined in the Constraints Analysis- which is the diversification of the Malawian economy through growth of industrial and manufacturing sectors and value added production.

Annex I: Indicator Definition Table										
Results Statement	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Methodology	Rationale or Justification for Measurement
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	%	Location Gender - headed households	Malawi Integrated Household Survey	National Statistics Office	Biennial	Survey	Indicator to monitor trends in poverty rates and assess progress towards Compact goal and MCC mission.
Objective-Level Outcome Indicators										
Reduced cost doing business in Malawi	Medium Term Outcome	Business sales losses due to power interruptions and quality	Average value of losses (including production and time costs) due to electricity outages as percentage of total sales value	%	Region Firm Size	MCA Enterprise Surveys	MCA-MW	Biennial	Survey	To measure alleviation of a binding constraint identified in the Constraints Analysis. This is an indicator used in the CA, and it measures power availability and quality for formal sector firms. Attribution of the Compact's impact on this indicator can only be achieved in the context of a rigorous impact evaluation.
	Medium Term Outcome	Back-up diesel generation for firms	Average annual kWh of diesel generation consumed by registered firms as a % of total electricity consumed	%	Region Firm Size	MCA Enterprise Surveys	MCA-MW	Biennial	Survey	To measure impact of power quality and availability on firm operations and growth. Proxy for economic (ForEx), environmental and business impacts. Attribution of the

Annex I: Indicator Definition Table										
Results Statement	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Methodology	Rationale or Justification for Measurement
										Compact's impact on this indicator can only be achieved in the context of a rigorous impact evaluation.
Improved electricity access	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	Administrative Data	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	Survey and Administrative Data	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
Improved availability of hydroelectric power plants (HEP)	Medium Term Outcome	Percent availability of hydroelectric power plants (HEP)	Total number of hours that a plant is able to produce electricity / total number of hours in a month	%	Power Plant	ESCOM Generation Performance Monitoring Reports	ESCOM	Annual	Administrative Data	Indicative measure of improved availability of HEPs resulting from ENRM interventions. Plant availability is influenced by numerous other factors including

Annex I: Indicator Definition Table										
Results Statement	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Methodology	Rationale or Justification for Measurement
										routine maintenance schedules.
	Medium Term Outcome	Percent utilization or operating ratio of HEP	Actual energy generated by the plant (MWh) / Theoretical maximum energy of installed capacity at the plant (MWh)	%	Power Plant	ESCOM Generation Performance Monitoring Reports	ESCOM	Annual	Administrative Data	Measures the use 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
Expansion of sector to better meet demand for power	Medium Term Outcome	Investment in Power Sub-Sector - total USD million committed by financial close	Total USD$ million committed by public and private sector entities by financial close on all investments in the power subsector (Generation, Transmission and Distribution)	US$ million	Private, Public	Energy Reports	Ministry of Energy	Annual	Administrative Data	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 Generation	Total MW of investment in Generation capacity completed and energized by public and private sector entities	MW	Private, Public	Energy Reports	Ministry of Energy	Annual	Administrative Data	Measure of private sector participation in the sector, both in generation and distribution. Targets will be based on

Annex I: Indicator Definition Table										
Results Statement	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Methodology	Rationale or Justification for Measurement
										Integrated Resource Plan completed in early 2011 and Malawi Electricity Investment Plan.
	Medium Term Outcome	Total electricity generated	Total System Generation produced or imported in a year	MWh		ESCOM Power Trading Reports (National Control Center)	ESCOM	Annual	Administrative Data	A measure of growth in generation capacity
	Medium Term Outcome	Total electricity consumed	Total MWh sales in all regions	MWh	Region, Customer type	ESCOM Revenue Department - Sales Statistics Report	ESCOM	Annual	Administrative Data	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 + Net imports) -Total MWh billed]/ (Total MWh sent from generation to transmission + Net imports)}	%		ESCOM System Operations Report	ESCOM	Quarterly	Administrative Data	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.

Annex I: Indicator Definition Table										
Results Statement	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Methodology	Rationale or Justification for Measurement
	Outcome	Transmission System losses (Technical)	{(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}	%		Power Trading Report	ESCOM	Quarterly	Administrative Data	To measure losses and performance specific to ESCOM's transmission business.
	Outcome	Distribution System losses (Technical & Non-Technical)	[(Total kWh received from transmission to distribution - total kWh billed) / (total kWh received from transmission to distribution)]	%		Power Trading Report and Consolidated Statistical Report	ESCOM	Quarterly	Administrative Data	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	Administrative Data	Temporary proxy measure for measuring the extent of outages. Also a required Key Performance Indicator for reporting to MERA
	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	Administrative Data	Temporary proxy measure for measuring the duration of outages. Also a required Key Performance Indicator for reporting to MERA.

Annex I: Indicator Definition Table										
Results Statement	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Methodology	Rationale or Justification for Measurement
	Outcome	Total system MWh shed	Total MWh shed in a year	MWh		ESCOM Distribution Performance Monitoring Reports	ESCOM	Quarterly	Administrative Data	To measure extent and magnitude of Generation shortfalls leading to planned outages.
Improved Voltage Quality	Outcome	Voltage Quality at select substations	Percentage of time within ±10% voltage range at substation	%	Region Voltage	ESCOM National Control Center - SCADA	ESCOM	Quarterly	Administrative Data	To measure quality of supply improvements due to the projects. Substations to include Chintheche, Lilongwe, and Mlangeni
Nkula A Activity										
Nkula A HPP refurbished and operational	Output	Total MW at Nkula A hydroelectric plant	Total capacity (MW) at Nkula A	MW		ESCOM System Operations Report	ESCOM	Monthly	Administrative Data	To measure generation capacity of Nkula before and after the project
Transmission Network Upgrade Activity										
Transmission lines upgraded, rehabilitated and extended	Output	New 132-kV lines built	Sum of km of new 132 kV lines added by activity , energized, tested and commissioned	Km		ESCOM System Operations Report	MCA-MW	Quarterly	Administrative Data	Indicative measure of improved transmission capacity before and after Compact
	Output	New 66-kV lines built	Sum of km of new 66 kV lines added by activity , energized, tested and commissioned	Km		ESCOM System Operations Report	MCA-MW	Quarterly	Administrative Data	Indicative measure of improved transmission capacity before and after Compact
	Output	New 400-kV lines built	Sum of km of new 400 kV lines added by activity , energized, tested and commissioned	Km		ESCOM System Operations Report	MCA-MW	Quarterly	Administrative Data	Indicative measure of improved transmission capacity before and after Compact
T&D Upgrade, Expansion and Rehabilitation Activity										

Annex I: Indicator Definition Table										
Results Statement	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Methodology	Rationale or Justification for Measurement
Total new transmission transformer capacity	Output	New transmission substation capacity added by compact	Sum of transmission transformer capacity added by compact	MVA		ESCOM System Operations Report	MCA-MW	Quarterly	Administrative Data	To measure transmission substation capacity of the ESCOM Network
Increased network control and improved data acquisition	Output	SCADA Availability - Transmission	Percentage of master station, communication and Remote Terminal Unit availability	%		ESCOM SCADA Department	MCA-MW	Quarterly	Administrative Data	To measure operational efficiency of ESCOM Network
	Output	SCADA Coverage Transmission	Percent of transmission substations with SCADA in operation	%		ESCOM SCADA Department	MCA-MW	Quarterly		To measure operational efficiency of ESCOM Network
Distribution network upgraded, extended, and/or operational	Output	Km of New MCC Distribution lines upgraded or built	Km of new 33-kV lines upgraded or built by Activity	Km		ESCOM System Operations Report	MCA-MW	Quarterly	Administrative Data	To measure distribution capacity before and after Compact implementation
	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	Administrative Data	To measure distribution capacity before and after Compact implementation
	Output	New Distribution substation capacity added and energized by Compact	Sum of distribution transformer capacity added and operational by Compact	MVA		ESCOM System Operations Report	MCA-MW	Quarterly	Administrative Data	To measure distribution capacity before and after Compact implementation
Infrastructure Development Project Process Milestones										
Process Milestones Achieved	Process	Temporary Employment Generated	The number of people temporarily employed or contracted by MCA-contracted construction companies to work on	Number	Gender	MCA-contracted construction firms	MCA-MW	Quarterly	Administrative Data	Designed to monitor temporary employment generated by Compact activities

Annex I: Indicator Definition Table										
Results Statement	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Methodology	Rationale or Justification for Measurement
			energy infrastructure investments.							
	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	Administrative Data	This is the percent disbursed of all the Infrastructure Development feasibility and design contracts
	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	Administrative Data	This is the sum total of all the Infrastructure Development Project feasibility and design contracts
	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	Administrative Data	This is the sum total disbursed of all the Infrastructure Development feasibility and design contracts
	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	Administrative Data	This is the percent disbursed of all the Infrastructure Development project construction contracts

Annex I: Indicator Definition Table										
Results Statement	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Methodology	Rationale or Justification for Measurement
	Process	*Value of signed power infrastructure construction contracts*	*The value of all signed construction contracts for power infrastructure investments using compact 609g funds.*	USD	Project Activity	MCA-MW	MCA-MW	Quarterly	Administrative Data	This is the sum total of all the Infrastructure Development Project construction contracts
	Process	*Value disbursed of signed power infrastructure construction contracts*	*The value disbursed of all signed construction contracts for power infrastructure investments using compact 609g funds.*	USD	Project Activity	MCA-MW	MCA-MW	Quarterly	Administrative Data	This is the sum total disbursed of all the Infrastructure Development project construction contracts
Power Sector Reform Project										
Improved financial sustainability / solvency of ESCOM	Outcome	Cost Recovery Ratio	Total Revenue/Total Cost	%	Operating expenses, Operating expense plus depreciation, and Operating expense depreciation plus return (weighted average cost of capital (WACC) X rate base).	ESCOM detailed financial model	ESCOM	Quarterly	Administrative Data	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	Debt - Equity Ratio	Total long-term debt / Total Shareholder's equity	ratio		ESCOM detailed financial model	ESCOM	Quarterly	Administrative Data	Measure of the indebtedness of ESCOM
	Outcome	Gearing Ratio	Total long-term debt + short-term debt + Bank Overdrafts / Total equity	ratio		ESCOM detailed financial model	ESCOM	Quarterly	Administrative Data	Measure of the indebtedness of ESCOM, included to track similar indicators proposed

Annex I: Indicator Definition Table										
Results Statement	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Methodology	Rationale or Justification for Measurement
										by the Energy Regulator – MERA.
	Outcome	Acid or Quick Test	Current Assets, excluding receivables and stocks / Current Liabilities	ratio		ESCOM detailed financial model	ESCOM	Quarterly	Administrative Data	Measure of the liquidity or financial security of ESCOM.
	Outcome	Current Ratio	Total Current Assets / Total Current Liabilities	ratio		ESCOM detailed financial model	ESCOM	Quarterly	Administrative Data	Measure of the liquidity or financial security of ESCOM.
Improved internal and external governance of ESCOM and the power sector	Outcome	Quality of ESCOM Corporate Governance	Progress against milestones set as a result of independent expert assessment based on international/regional best practices and Malawi law as articulated in Corporate Governance Benchmarking Study	TBD		Benchmarking Study	MCA-MW	Annual	TBD	To measure the quality and progress of corporate governance reform at ESCOM
	Outcome	Regulatory Independence and Effectiveness	Progress against milestones set as a result of independent expert assessment and / or benchmarking study on issues such as quality of regulatory decisions based upon sound analysis, conformity with Laws of Malawi, independence, and transparency based on international / regional best practices and governing principles in conformance with Annex I	TBD		Benchmarking Study	MCA-MW	Annual	TBD	To measure the quality and progress of regulatory reform and capacity of MERA
ESCOM Turnaround Activity										
Improved financial management	Output	ESCOM Billing and	[Total revenue from post-paid bills collected in current month/Total revenue from	%	Region	ESCOM detailed	ESCOM	Quarterly	Administrative Data	Measure of the efficiency of revenue collection,

Annex I: Indicator Definition Table										
Results Statement	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Methodology	Rationale or Justification for Measurement
		Collection Efficiency	post-paid electricity billed in previous month] x 100			financial model				specifically the percentage of receivables collected from customers. The measure shows how the company utilizes it cash and the amount of working capital tied up.
	Output	Quantity of Electricity Metered	Total MWh sent from transmission to distribution	MWh	Region	ESCOM detailed financial model	ESCOM	Quarterly	Administrative Data	To measure the quantity of electricity expected to be metered to customers
	Output	Average Collection Period in days	365 Days * [(Beginning accounts receivables + ending accounts receivable) / 2) / Total post-paid sales]	Days		ESCOM detailed financial model	ESCOM	Quarterly	Administrative Data	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).
	Output	Bad Debt	Total value of accounts receivables over 90 days/Total accounts receivable	%		ESCOM detailed financial model	ESCOM	Quarterly	Administrative Data	Measure of losses through uncollectable debt. .

Annex I: Indicator Definition Table										
Results Statement	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Methodology	Rationale or Justification for Measurement
	Output	Average Creditor Days	365 * [(Beginning accounts payables + ending accounts payables) / 2) /Total purchases] Where total purchases = cost of sales + overheads	Days		ESCOM detailed financial model	ESCOM	Quarterly	Administrative Data	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.
Improved ESCOM operational management and efficiency	Output	Average Cost of Electricity Billed	[Operating expense plus depreciation plus return (weighted average cost of capital (WACC) X rate base)]/ Total electricity billed (kWh)]*US$/MWK	US$/kWh		ESCOM detailed financial model	ESCOM	Quarterly	Administrative Data	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	Administrative Data	Proxy measure of sustainability of operational investments in ESCOM.

Annex I: Indicator Definition Table										
Results Statement	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Methodology	Rationale or Justification for Measurement
Improved management of procurements by ESCOM	Output	Annualized Procurement Audits	Number of procurement audits completed by Auditor General's Office receiving satisfactory assessments	Number		ESCOM Procurement Department	ESCOM	Bi-Annual	Administrative Data	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	Action plan to recover accounts receivable	Implementation of an action plan to recover accounts receivable, including past dues	Date		ESCOM	ESCOM	Quarterly	Administrative Data	Key action step required for improving revenue collection at ESCOM; used to measure progress towards improved billings & collections efficiency.
	Output	Transition to Pre-paid metering system	Number of customers with pre-paid meters installed / Total number of customers	%		ESCOM	ESCOM	Quarterly	Administrative Data	Indicates progress by ESCOM in transitioning to a pre-paid metering system
	Output	Billing system installed	Install a robust billings system by Calendar Q1 2016	Date		ESCOM	ESCOM	Quarterly	Administrative Data	Key action step required for improving revenue collection at ESCOM; indicated in PSRP Implementation Plan
Sufficient working and investment capital for ESCOM	Output	Turnaround Facility funded by GOM - USD	Yearly GOM financial contribution required	USD		Ministry of Finance - PERMU	ESCOM	Quarterly	Administrative Data	Measure of the liquidity or financial security of ESCOM.
	Output	Turnaround Facility funded by GOM - as fraction of amount in financial plan	Yearly GOM financial contribution as fraction of amount indicated by MCC-approved Financial Plan	%		ESCOM Financial Controller Responsible for	ESCOM	Quarterly	Administrative Data	Funding of Turnaround Facility is a key covenant of Compact as defined in Compact Annex I for

Annex I: Indicator Definition Table										
Results Statement	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Methodology	Rationale or Justification for Measurement
						Expenditure				ensuring ESCOM has capital available to implement PSRP and Infrastructure interventions
Improved quality of customer service	Output	Customer satisfaction and perceptions of ESCOM Service	Percent Improvement in Key Indicators of Customers Satisfaction, disaggregated by gender	%	Gender	MCA-M MEE Department	MCA-MW	Annual	Survey	To measure customer perceptions of ESCOM service, and to provide feedback to utility and thus enabling customers to influence their performance.
Improved management of procurements	Output	Procurement policies and procedures in place	Procurement policies and procedures manual adopted	Date		ESCOM	ESCOM	Quarterly	Administrative Data	Key action step required to strengthen and improve internal controls
	Output	Training plans developed and implemented for managers	Percentage of total managers trained in a year	%		Human Resources Department	ESCOM	Quarterly	Administrative Data	Key action step required to strengthen and improve internal controls
Improved corporate planning/governance processes at ESCOM	Output	New plans created and adopted by ESCOM Board	Percentage of new plans created and implemented/adopted as per the Integrated Strategic Plan	%		Planning and Development division of ESCOM	ESCOM	Quarterly	Administrative Data	ESCOM yearly strategic plan is expected to include various plans to improve governance and organizational performance
ESCOM's fiduciary duties improved by	Output	Financial Plans updated	ESCOM Financial Plan with agreed upon financial ratios and covenants as defined in	Date		Financial Plan	ESCOM	Quarterly	Measure of the liquidity or financial	Reflects on the liquidity or financial security of ESCOM.

Annex I: Indicator Definition Table										
Results Statement	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Methodology	Rationale or Justification for Measurement
adopting commercial and corporate governance principles			Annex I under Compact updated						security of ESCOM.	
	Output	ESCOM Public Annual Report and Audited Financial Statements	Annual reports and audited financial statements published by ESCOM within 120 days after closure of the year	Number		ESCOM Director of Finance; ESCOM website - www.escom.mw	ESCOM	Annual	Administrative Data	Means for ensuring that ESCOM finances are transparent and accountable to stakeholders
	Output	Non-technical loss reduction study	Non-technical loss reduction study conducted for ESCOM	Date		ESCOM	ESCOM	Quarterly	Administrative Data	Key study required to develop loss reduction action plan
	Output	Turnaround Support Team deployed	ESCOM Turnaround Support Team is mobilized and deployed	Date		ESCOM	ESCOM	Quarterly	Administrative Data	Turnaround Support Team is a tasked with supporting and implementing key tasks and action plans under the ESCOM Turnaround Activity
REGULATORY STRENGTHENING ACTIVITY										
	Output	Life line tariff access	Number of customers who are classified as life line tariff	Number		ESCOM	ESCOM	Quarterly	Administrative Data	The most recently tariff proposed by ESCOM still has a life line that is not well targeted for the lower income customers. For the first year the lifeline will be a subsidy across the board but ESCOM is supposed to develop a plan to better target that

Annex I: Indicator Definition Table										
Results Statement	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Methodology	Rationale or Justification for Measurement
										lifeline to low income users.
Strengthened regulatory environment	Output	Cost of supply	Average tariff charged by ESCOM to cover revenue requirements and cost of supply	US Cents / kWh		ESCOM	ESCOM	Quarterly	Administrative Data	Determines the cost of supplying electricity service and informs adjustments to tariffs to ensure cost-recovery
	Output	Tariff Levels and Schedules	Approved Tariff Levels and Schedules by MERA adhered to throughout the Compact	US Cents / kWh		MERA Reports	MERA	Quarterly	Administrative Data	Measures ability to revise tariffs and adjust tariff schemes in order to cover costs with revenues.
	Output	Tariff application processing time	Average time to respond to tariff rate cases	Days		MERA Reports	MERA	Quarterly	Administrative Data	Measures ability to revise tariffs and adjust tariff schemes in order to cover costs with revenues.
	Output	Tariff indexation framework implemented on time	Cost of supply / approved tariff levels and schedules	ratio		MERA Reports	MERA	Quarterly	Administrative Data	Measures ability to revise tariffs and adjust tariff schemes in order to cover costs with revenues.
	Output	MERA Public Annual Report and Audited	Annual reports and audited financial statements published by MERA within	Number		MERA Reports	MERA	Annually	Administrative Data	Measure to track progress towards ensuring standard

Annex I: Indicator Definition Table										
Results Statement	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Methodology	Rationale or Justification for Measurement
		Financial Statements	120 days after closure of the year							public financial disclosure of MERA
	Output	MERA Resolutions	Percentage of ESCOM performance reports reviewed on time	%		MERA Reports	MERA	Quarterly	Administrative Data	Measures MERA's ability to track ESCOM's progress on agreed deliverables in tariff application.
Improved market structure for Private Investment	Output	Power Market Structure report produced	Restructured power market planning and preparation	Date		Ministry of Energy	MoE	Quarterly	Administrative Data	A measure of the creation of an enabling environment for power sector investment by private sector
	Output	Energy policy reviewed	Final draft energy policy produced	Date		Ministry of Energy	MERA	Quarterly	Administrative Data	Key step to support reforms needed to improve market structure and encourage private investment
	Output	Electricity Act Reviewed	Revised Energy Laws to strengthen electricity market	Date		Ministry of Energy	MoE	Quarterly	Administrative Data	Key reforms needed to improve market structure and encourage private investment
	Output	Rural Electrification Act amended	Rural Electrification Act is amended to remove IRR and MW size restrictions	Date		Ministry of Energy	MoE	Quarterly	Administrative Data	Key reforms needed to improve market structure and encourage private investment
	Output	Standard Power Purchasing Agreement	Standard Power Purchasing Agreement developed and gazetted	Date		Ministry of Energy	MoE	Quarterly	Administrative Data	Standard Power Purchase Agreement is requirement for creating an enabling

Annex I: Indicator Definition Table										
Results Statement	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Methodology	Rationale or Justification for Measurement
										environment for private sector investment
	Output	Renewable Energy Feed-in Tariff	Renewable Energy Feed-in Tariff developed and gazetted	Date		Ministry of Energy	MoE	Quarterly	Administrative Data	Renewable Energy Feed-in Tariff is a building block of a bilateral power trade market
Strengthened MERA operations	Output	Cost-reflective levies and charges	Confirmation that current levies and charges are sufficient to cover MERA's operating expenses, or a strategy for increasing those levies and charges to achieve sufficiency.	Date		MERA Reports	MERA	Quarterly	Administrative Data	Levies and other charges applicable under the Energy Laws should be sufficient to cover MERA's operating expenses
	Output	Exchange visits with regulators	Number of exchange visits, workshops and training programs involving MERA and other regulators in the region.	Number		MERA Reports	MERA	Quarterly	Administrative Data	Critical for MERA to establish interactive relationships with other regulators in the region through exchange visits and workshops on topics of mutual interest, enabling regulators to learn from each other and thereby improve MERA effectiveness as a regulator
New sustainable and pro-poor tariff regime which allows for future investments to be implemented	Output	Phased implementation plan for cost-reflective tariff regime developed	Phased implementation plan for cost-reflective tariff regime developed	Date		MERA Reports	MERA	Quarterly	Administrative Data	Cost reflective tariff determines utilities' ability to cover expenditures with revenues
	Output	Tariff design efficiency that includes a	Tariff design efficiency that includes a Lifeline Tariff or other mechanisms developed for promoting	Yes/No		MERA Reports	MERA	Quarterly	Administrative Data	Key reforms needed to improve market structure and

Annex I: Indicator Definition Table										
Results Statement	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Methodology	Rationale or Justification for Measurement
		Lifeline Tariff developed	access for low income customers							encourage private investment
Process achieved	Output	Corporate governance benchmarking study	Procurement and implementation of Corporate governance benchmarking study by Year 2 of Compact Implementation	Date		MCA-MW	MCA-MW	Quarterly	Administrative Data	To measure progress in implementing corporate governance benchmarking study at ESCOM
	Output	Sector benchmarking study	Procurement and implementation of Sector benchmarking study by Year 2 of Compact	Date		MCA-MW	MCA-MW	Quarterly	Administrative Data	To measure progress in implementing sector benchmarking study for MERA
	Output	Peer reviews conducted	Number of peer reviews conducted between MERA and other regulators	Number		MERA	MCA-MW	Quarterly	Administrative Data	Peer to peer relationships are expected to contribute to strengthening of operations at MERA
Power Sector Reform Project Process Milestones										
	Process	Temporary Employment Generated	The number of people temporarily employed or contracted by MCA-contracted construction companies to work on power sector reform investments.	Number	Gender	MCA-contracted construction firms	MCA-MW	Quarterly	Administrative Data	Designed to monitor temporary employment generated by Compact activities
	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	Administrative Data	Proxy for percent complete of projects and contracts

Annex I: Indicator Definition Table										
Results Statement	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Methodology	Rationale or Justification for Measurement
	Process	*Value of signed power sector reform project contracts*	*The value of all signed contract for power sector reform investments using compact and 609(g) funds.*	USD	Project Activity	MCA-MW	MCA-MW	Quarterly	Administrative Data	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	Administrative Data	Proxy for percent complete of projects and contracts
Environment and Natural Resources Management Project										
Improved utilization of hydroelectric power plants (HEP)	Outcome	Electricity not generated due to weeds and sedimentation	Sum [Recorded output (MW) for each HPP just before outage X Outage duration (h)]	MWh	Power Plant	ESCOM Generation Performance Monitoring Reports	ESCOM	Quarterly	Administrative Data	To measure outages due to ENRM problems, and thus performance of WSM project
Reduced weed infestation and sedimentation in upper Shire River basin	Outcome	Distribution of invasive aquatic species	Area (Km^2) of weeds in upper and middle Shire River basin as observed in geographic information system maps and field observations	km^2	Location (Upper and Middle Shire River)	MCA-MW ESPD Progress Reports	MCA-MW	Biannual	Administrative Data	Measure of the root causes or underlying environmental conditions which are causing electricity outages in generation
	Outcome	Water turbidity	{(Dry weight of residue and filter - Dry weight of filter alone, in gm)/ mL of sample} X 1,000,000	Mg/L	Power plant	MCA-MW ESPD Progress Reports	MCA-MW	Biannual – October/November and June/July	Survey	To measure effectiveness of ENRM activities in Upper Shire River
Engagement of women, men, communities, traditional authorities and leaders in the	Outcome	Improved Yields	Improved yields among men and women practicing conservation agriculture in the shire river basin	kg/hectare	Gender	Small grants quarterly reports and Trust	MCA-MW and Trust once set up	Annual	Survey	Improved soil management and adoption of conservation agriculture techniques should

Annex I: Indicator Definition Table										
Results Statement	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Methodology	Rationale or Justification for Measurement
sustainable and equitable management of natural resources						grant reports				improve yields over time
	Outcome	Women's inclusion in natural resource management	Percentage of female lead farmers who have adopted conservation agricultural technologies	%		Survey	MCA-MW and Trust once set up	Annual	Survey	Project is targeting women as primary decision makers on NRM and agricultural land use
Weed and Sediment Management Activity										
Improved management of aquatic weeds	Output	Average weed management expenses per ton of weed harvested	Amount spent on weed management/Tons of weed harvested	USD		ESCOM Generation Performance Monitoring Reports	ESCOM	Quarterly	Administrative Data	To measure outages due to ENRM problems, and thus performance of WSM project
	Output	Amount of weed harvested at Liwonde barrage	Average weight in metric tons of weed harvested at Liwonde barrage per month	Metric tons		ESCOM Generation Performance Monitoring Reports	ESCOM	Quarterly	Administrative Data	To measure outages due to ENRM problems, and thus performance of WSM project
Improved control of sediment	Output	Average sediment management expenses per ton of sediment harvested	Amount spent on sediment management/Tons of sediment removed	USD		ESCOM Generation Performance Monitoring Reports	ESCOM	Biannual	Administrative Data	To measure outages due to ENRM problems, and thus performance of WSM project
	Output	Percentage of head pond available	Actual Head pond volume for HEP / Original head pond volume for HEP	%	Power Plant	ESCOM Generation Performance	ESCOM	Biannual	Administrative Data	To measure outages due to ENRM problems, and thus performance of WSM project

Annex I: Indicator Definition Table										
Results Statement	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Methodology	Rationale or Justification for Measurement
						Monitoring Reports				
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	Output	Operational Payment for Ecosystem Services mechanism established	Legal institution registered with the General Registry office with bylaws establishing a Payment for Ecosystem Services mechanism to support land management activities in the Shire River Basin	Date		MCA-MW ESPD Progress Reports	MCA-MW	Quarterly	Administrative Data	Sustainable financing and coordination of ENRM activities
	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	Administrative Data	Indicator of progress implementing a small grants program
	Output	Number of feeding scars on sampled water hyacinth colonies	Number of signs of plant damage on sampled colonies	Number	Location	MCA-MW ENRM Project Reports	MCA-MW	Biannual	Administrative Data	To measure the effectiveness of bio-control measures on water hyacinths control
	Output	Plan for sustainability of the payment for ecosystem services mechanism	Feasibility plan to be developed to determine best path to achieve financial and operational sustainability based on endowment and grant making objectives	Date		MCA-MW ESPD Progress Reports	MCA-MW	Quarterly	Administrative Data	Sustainable financing and coordination of ENRM activities
Social and Gender Enhancement Fund										

Annex I: Indicator Definition Table										
Results Statement	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Methodology	Rationale or Justification for Measurement
	Output	Community members engaged in on-going community level dialogues	Number of community members participating in community-level dialogues or initiatives	Number	Gender	MCA-MW ESPD Progress Reports	MCA-MW	Biannual	Administrative Data	Represents equitable participation of women in community level decision-making
	Output	Leaders trained on social/gender/ natural resource management issues	Number of women and men trained in management of natural resources	Number	Gender	MCA-MW ESPD Progress Reports	MCA-MW	Biannual	Administrative Data	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	Biannual	Administrative Data	Indicates number of women equipped to effectively serve in leadership positions within the community
	Output	Women members of community/village level committees	Number of women who serve as members on community or village-level committees	Number	Gender	MCA-MW ESPD Progress Reports	MCA-MW	Biannual	Administrative Data	Indicates equitable representation of women on community-level decision-making bodies
ENRM_SGA Project Process Milestones										
	Process	Temporary Employment Generated	The number of people temporarily employed or contracted by MCA-contracted construction companies to work on ENRM_SGA investments.	Number	Gender	MCA-contracted construction firms	MCA-MW	Quarterly	Administrative Data	Designed to monitor temporary employment generated by Compact activities
	Process	Percent disbursed of signed power sector reform	The total amount of all signed ENRM_SGA investments disbursed	%		MCA-MW	MCA-MW	Quarterly	Administrative Data	Proxy for percent complete of projects and contracts

Annex I: Indicator Definition Table										
Results Statement	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Methodology	Rationale or Justification for Measurement
		project contracts	divided by the total value of all signed contracts							
	Process	*Value of signed ENRM_SGA project contracts*	*The value of all signed contract for ENRM_SGA investments using compact and 609(g) funds.*	USD	Project Activity	MCA-MW	MCA-MW	Quarterly	Administrative Data	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	Administrative Data	Proxy for percent complete of projects and contracts

ANNEX II – TABLE OF INDICATOR BASELINES AND TARGETS

Of signed Annex II: Indicator Baselines and Targets										
Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
				2013	2014	2015	2016	2017	2018	
Compact Wide Indicators										
Goal	Annual real GDP growth rate	%	Level	5.0						
Goal	Annual real per capita income	US$/person	Level	145						
Goal	Percentage of GDP attributable to manufacturing and industry	%	Level	9						
Goal	Poverty rate or poverty gap National	%	Level	54						
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						
Goal	Poverty rate or poverty gap for female headed households	%	Level	47						
Objective-Level Outcome Indicators										
Medium Term Outcome	Business sales losses due to power interruptions and quality - Small Enterprises	%	Level	71%						-

Of signed Annex II: Indicator Baselines and Targets										
Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
				2013	2014	2015	2016	2017	2018	
Medium Term Outcome	Business sales losses due to power interruptions and quality - Northern Region Small Enterprises	%	Level							
Medium Term Outcome	Business sales losses due to power interruptions and quality - Central Region Small Enterprises	%	Level							
Medium Term Outcome	Business sales losses due to power interruptions and quality - Southern Region Small Enterprises	%	Level							
Medium Term Outcome	Business sales losses due to power interruptions and quality - Medium Enterprises	%	Level	89%						-
Medium Term Outcome	Business sales losses due to power interruptions and quality - Northern Region Medium Enterprises	%	Level							
Medium Term Outcome	Business sales losses due to power interruptions and quality - Central Region Medium Enterprises	%	Level							
Medium Term Outcome	Business sales losses due to power interruptions and quality - Southern Region Medium Enterprises	%	Level							
Medium Term Outcome	Business sales losses due to power interruptions and quality - Large Enterprises	%	Level	85%						-
Medium Term Outcome	Business sales losses due to power interruptions and quality - Northern Region Large Enterprises	%	Level							

Of signed Annex II: Indicator Baselines and Targets										
Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
				2013	2014	2015	2016	2017	2018	
Medium Term Outcome	Business sales losses due to power interruptions and quality - Central Region Large Enterprises	%	Level							
Medium Term Outcome	Business sales losses due to power interruptions and quality - Southern Region Large Enterprises	%	Level							
Medium Term Outcome	Back-up diesel generation for firms, disaggregated by firm size - Small Enterprises	%	Level	0%						-
Medium Term Outcome	Back-up diesel generation for firms, disaggregated by firm size - Northern Region Small Enterprises	%	Level							
Medium Term Outcome	Back-up diesel generation for firms, disaggregated by firm size - Central Region Small Enterprises	%	Level							
Medium Term Outcome	Back-up diesel generation for firms, disaggregated by firm size - Southern Region Small Enterprises	%	Level							
Medium Term Outcome	Back-up diesel generation for firms, disaggregated by firm size - Medium Enterprises	%	Level	0%						-
Medium Term Outcome	Back-up diesel generation for firms, disaggregated by firm size - Northern Region Medium Enterprises	%	Level							
Medium Term Outcome	Back-up diesel generation for firms, disaggregated by firm size - Central Region Medium Enterprises	%	Level							

Of signed Annex II: Indicator Baselines and Targets										
Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
				2013	2014	2015	2016	2017	2018	
Medium Term Outcome	Back-up diesel generation for firms, disaggregated by firm size - Southern Region Medium Enterprises	%	Level							
Medium Term Outcome	Back-up diesel generation for firms, disaggregated by firm size - Large Enterprises	%	Level	0%						-
Medium Term Outcome	Back-up diesel generation for firms, disaggregated by firm size - Northern Region Large Enterprises	%	Level							
Medium Term Outcome	Back-up diesel generation for firms, disaggregated by firm size - Central Region Large Enterprises	%	Level							
Medium Term Outcome	Back-up diesel generation for firms, disaggregated by firm size - Southern Region Large Enterprises	%	Level							
Medium Term Outcome	Customers connected to the grid	Number	Level	235,469	-	-	-	-	-	-
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
Medium Term Outcome	Commercial customers connected to the grid	Number	Level	30,137	36,645	36,828	37,012	37,197	37,383	37,383
Medium Term Outcome	Industrial customers connected to the grid	Number	Level	808	760	764	768	771	775	775
Medium Term Outcome	Electric Power Consumption per capita	kWh/person	Level	95	99	106	107	115	127	127

Of signed Annex II: Indicator Baselines and Targets										
Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
				2013	2014	2015	2016	2017	2018	
Medium Term Outcome	Percent Plant availability of HEP	%	Level	90	-	-	-	-	-	-
Medium Term Outcome	Percent availability of HEP - Nkula A	%	Level	92	-	-	-	-	-	-
Medium Term Outcome	Percent availability of HEP - Nkula B	%	Level	86	-	-	-	-	-	-
Medium Term Outcome	Percent availability of HEP - Tedzani I & II	%	Level	98	-	-	-	-	-	-
Medium Term Outcome	Percent availability of HEP - Tedzani III	%	Level	99	-	-	-	-	-	-
Medium Term Outcome	Percent availability of HEP - Kapichira I	%	Level	97	-	-	-	-	-	-
Medium Term Outcome	Percent availability of HEP - Kapichira II	%	Level	-	-	-	-	-	-	-
Medium Term Outcome	Percent utilization of HEP	%	Level	78	-	-	-	-	-	-
Medium Term Outcome	Percent utilization of HEP - Nkula A	%	Level	85	-	-	-	-	-	-
Medium Term Outcome	Percent utilization of HEP - Nkula B	%	Level	64	-	-	-	-	-	-
Medium Term Outcome	Percent utilization of HEP - Tedzani I & II	%	Level	96	-	-	-	-	-	-

Of signed Annex II: Indicator Baselines and Targets										
Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
				2013	2014	2015	2016	2017	2018	
Medium Term Outcome	Percent utilization of HEP - Tedzani III	%	Level	68	-	-	-	-	-	-
Medium Term Outcome	Percent utilization of HEP - Kapichira I	%	Level	75	-	-	-	-	-	-
Medium Term Outcome	Percent utilization of HEP - Kapichira II	%	Level	-	-	-	-	-	-	-
Medium Term Outcome	Investment in Power Sub-Sector - total USD million committed by financial close	US$ million	Level	$435	$0	$0	$0	$0	$0	-
Medium Term Outcome	Investment in Power Sub-Sector - Private Sector commitments in $USD	US$ million	Cumulative	$0						-
Medium Term Outcome	Investment in Power Sub-Sector - Public Sector commitments in $USD	US$ million	Cumulative	$435						-
Medium Term Outcome	Investment in Power Sub-Sector - MW of investment in Generation	MW	Cumulative	64	0	0	0	0	0	-
Medium Term Outcome	Investment in Power Sub-Sector - Private Sector MW investment	MW	Level	0						-
Medium Term Outcome	Investment in Power Sub-Sector - Public Sector MW investment	MW	Level	64						-
Medium Term Outcome	Total Generation	GWh	Level	1,841	1,925	2,137	2,204	2,431	2,725	2,725

Of signed Annex II: Indicator Baselines and Targets										
Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
				2013	2014	2015	2016	2017	2018	
Medium Term Outcome	Total Generation - Nkula A	GWh	Level	179	183	125	136	147	225	225
Medium Term Outcome	Total Generation - Nkula B	GWh	Level	561	639	677	714	751	788	788
Medium Term Outcome	Total Generation - Tedzani I & II	GWh	Level	336	333	333	333	333	333	333
Medium Term Outcome	Total Generation - Tedzani III	GWh	Level	313	337	339	342	344	346	346
Medium Term Outcome	Total Generation - Kapichira I	GWh	Level	427	414	431	448	465	483	483
Medium Term Outcome	Total Generation - Kapichira II	GWh	Level	-	-	213	213	373	533	533
Medium Term Outcome	Total Generation - Wovwe	GWh	Level	25	19	19	19	19	18	18
Medium Term Outcome	Total electricity consumed	MWh	Level	1,406,549	1,520,896	1,687,937	1,741,138	1,920,844	2,186,861	2,186,861
Medium Term Outcome	Total Electricity Consumed - Residential Customers	MWh	Level	575,351	619,005	686,991	708,643	781,783	890,053	890,053
Medium Term Outcome	Total Electricity Consumed - Residential Customers – Northern	MWh	Level	47,804	51,432	57,080	58,879	64,956	73,952	73,952

Of signed Annex II: Indicator Baselines and Targets										
Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
				2013	2014	2015	2016	2017	2018	
Medium Term Outcome	Total Electricity Consumed - Residential Customers – Central	MWh	Level	223,960	240,953	267,417	275,845	304,316	346,461	346,461
Medium Term Outcome	Total Electricity Consumed - Residential Customers - Southern	MWh	Level	303,586	326,620	362,493	373,918	412,511	469,640	469,640
Medium Term Outcome	Total Energy Consumption - Commercial Customers	MWh	Level	214,691	273,761	303,829	313,405	345,752	393,635	393,635
Medium Term Outcome	Total Energy Consumption - Commercial Customers – Northern	MWh	Level	23,883	30,454	33,799	34,864	38,463	43,790	43,790
Medium Term Outcome	Total Energy Consumption - Commercial Customers - Central	MWh	Level	86,968	110,897	123,077	126,956	140,059	159,456	159,456
Medium Term Outcome	Total Energy Consumption - Commercial Customers - Southern	MWh	Level	103,839	132,410	146,953	151,584	167,230	190,389	190,389
Medium Term Outcome	Total Energy Consumption - Industrial Customers	MWh	Level	616,506	628,130	697,118	719,090	793,308	903,174	903,174
Medium Term Outcome	Total Energy Consumption - Industrial Customers – Northern	MWh	Level	29,748	30,308	33,637	34,697	38,279	43,580	43,580
Medium Term Outcome	Total Energy Consumption - Industrial Customers – Central	MWh	Level	149,059	151,869	168,549	173,861	191,806	218,369	218,369
Medium Term Outcome	Total Energy Consumption - Industrial Customers – Southern	MWh	Level	437,700	445,953	494,932	510,531	563,224	641,225	641,225

Of signed Annex II: Indicator Baselines and Targets										
Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
				2013	2014	2015	2016	2017	2018	
Infrastructure Development Project										
Outcome	Total system losses (Technical and Non-Technical)	%	Level	22.0	21.0	21.0	21.0	21.0	19.8	19.8
Outcome	Transmission System losses (Technical)	%	Level	10.5	9.0	9.0	9.0	9.0	8.8	8.8
Outcome	Distribution System losses (Technical & Non-Technical)	%	Level	11.5	12.0	12.0	12.0	12.0	11.0	11.0
Outcome	Average Frequency of forced outages/interruptions	Ratio	Level	1.7	1.74	1.5	1.26	1.02	0.78	0.78
Outcome	Average Duration of outages/interruptions	Hours	Level	3.48	3.48	3.15	2.82	2.48	2.15	2.15
Outcome	Total System MWh Shed	MWh	Level	18,847	28,500	-	8,446	16,934	25,465	25,465
Outcome	Voltage quality at primary substations - Northern Region - Chintheche 132kV	%	Level							90
Outcome	Voltage quality at select substations - Central Region – Lilongwe A 66kV	%	Level							90
Outcome	Voltage quality at select substations - Central Region – Mlangeni 66kV	%	Level							90
Nkula A Activity										
Output	Total MW at Nkula A hydroelectric plant	MW	Cumulative	24	21	14	15	17	26	27

Of signed Annex II: Indicator Baselines and Targets										
Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
				2013	2014	2015	2016	2017	2018	
Transmission Network Upgrade Activity										
Output	New 132-kV lines built	Kms	Cumulative	0						133
Output	New 66-kV lines built	Kms	Cumulative	0						103
Output	New 400-kV lines built	Kms	Cumulative	0						173
T&D Upgrade, Expansion and Rehabilitation Activity										
Output	New transmission substation capacity added by compact	MVA	Cumulative	991.5					1661.5	1661.5
Output	SCADA Availability Transmission	%	Cumulative	98	95	95	95	95	95	95
Output	SCADA Coverage Transmission	%	Cumulative	50					85	85
Output	Kms of New MCC Distribution lines upgraded or built	Kms	Cumulative	0					37	37
Output	Kms of New MCC Distribution Cables	Kms	Cumulative	0					29	29

Of signed Annex II: Indicator Baselines and Targets										
Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
				2013	2014	2015	2016	2017	2018	
Output	New Distribution substation capacity added and energized by Compact	MVA	Cumulative	868					942	942
Infrastructure Development Project Process Milestones										
Process	Temporary Employment Generated	Number	Cumulative	0						
Process	Temporary Employment Generated - Male	Number	Cumulative	0						
Process	Temporary Employment Generated - Female	Number	Cumulative	0						
Process	Percent disbursed of power infrastructure feasibility and design contracts	%	Cumulative	0						
Process	Value of signed power infrastructure feasibility and design contracts	USD	Cumulative	0						
Process	Value disbursed of signed power infrastructure feasibility and design contracts	USD	Cumulative	0						
Process	Percent disbursed of power infrastructure construction contracts	%	Cumulative	0						

Of signed Annex II: Indicator Baselines and Targets										
Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
				2013	2014	2015	2016	2017	2018	
Process	Value of signed power infrastructure construction contracts	USD	Cumulative	0						
Process	Value of signed Nkula A construction contracts	USD	Cumulative	0						
Process	Value of signed Transmission Network Upgrade Activity construction contracts	USD	Cumulative	0						
Process	Value of signed T&D Upgrade Activity construction contracts	USD	Cumulative	0						
Process	Value disbursed of signed power infrastructure construction contracts	USD	Cumulative	0						
Process	Value disbursed of signed Nkula A construction contracts	USD	Cumulative	0						
Process	Value disbursed of signed Transmission Network Upgrade Activity construction contracts	USD	Cumulative	0						
Process	Value disbursed of signed T&D Upgrade Activity construction contracts	USD	Cumulative	0					0%	0%
Power Sector Reform Project										

Of signed Annex II: Indicator Baselines and Targets										
Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
				2013	2014	2015	2016	2017	2018	
Outcome	Cost Recovery Ratio - operating expenses	%	Level	175	141	160	155	151	150	150
Outcome	Cost Recovery Ratio - operating expenses + depreciation	%	Level	160	135	149	140	134	128	128
Outcome	Cost Recovery Ratio - operating expenses + depreciation + return (weighted average cost of capital (WACC) X rate base).	%	Level	142	135	106	118	100	120	120
Outcome	Debt - Equity Ratio	ratio	Level	0.20	0.40	0.40	0.40	0.40	0.40	0.40
Outcome	Gearing Ratio	Ratio	Level						0.66	0.66
Outcome	Acid or Quick Test	ratio	Level	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Outcome	Current Ratio	ratio	Level	3.83	2.0 - 4.0	2.0 - 4.0	2.0 - 4.0	2.0 - 4.0	2.0 - 4.0	2.0 - 4.0
Outcome	Quality of ESCOM Corporate Governance	TBD	Level	0						TBD

Of signed Annex II: Indicator Baselines and Targets										
Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
				2013	2014	2015	2016	2017	2018	
Outcome	Regulatory Independence and Effectiveness	TBD	Level	0						TBD
ESCOM Turnaround Activity										
Output	ESCOM Billing and Collection Efficiency - All regions	%	Level							95
Output	ESCOM Billing and Collection Efficiency - Southern ES	%	Level							95
Output	ESCOM Billing and Collection Efficiency - Central ES	%	Level							95
Output	ESCOM Billing and Collection Efficiency - Northern ES	%	Level							95
Output	Quantity of Electricity Metered - All Regions	MWh	Level	1,652,376	1,751,919	1,944,333	2,005,615	2,212,617	2,486,618	2,486,618
Output	Quantity of Electricity Metered - Northern Region	MWh	Cumulative	124,031	131,503	145,946	150,546	166,085	186,652	186,652
Output	Quantity of Electricity Metered - Central Region	MWh	Cumulative	557,148	590,712	655,591	676,254	746,051	838,438	838,438

Of signed Annex II: Indicator Baselines and Targets										
Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
				2013	2014	2015	2016	2017	2018	
Output	Quantity of Electricity Metered - Southern Region	MWh	Cumulative	971,196	1,029,703	1,142,796	1,178,815	1,300,482	1,461,528	1,461,528
Output	Average Collection Period in days	Days	Level	54	60	45	45	45	45	45
Output	Bad Debt	%	Level	20	13	8	5	2	2	2
Output	Average Creditor Days	Days	Level	75	-	30	30	30	30	30
Output	Average Cost of Electricity Billed	US$/kWh	Level	0.07	TBD	TBD	TBD	TBD	TBD	TBD
Output	ESCOM Maintenance Expenditures ratio to planned maintenance budget	%	Level	128	100	100	100	100	100	100
Output	Annualized Procurement Audits	Number	Cumulative	0	1	1	1	1	1	5
Output	Action plan to recover accounts receivable	Date	Date		TBD	TBD	TBD	TBD	TBD	TBD

Of signed Annex II: Indicator Baselines and Targets										
Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
				2013	2014	2015	2016	2017	2018	
Output	Transition to Pre-paid metering system	%	Level	36	50	100	100	100	100	100
Output	Billing system installed	Date	Date				Q1 2016			Q1 2016
Output	Turnaround Facility funded by GOM - USD	USD	Level	10,000,000						
Output	Turnaround Facility funded by GOM - as fraction of amount in financial plan	%	Level	100	100	100	100	100	100	100
Output	Customer satisfaction and perceptions of ESCOM Service	%	Level	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Output	Customer satisfaction and perceptions of ESCOM Service - Male	%	Level	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Output	Customer satisfaction and perceptions of ESCOM Service - Female	%	Level	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Output	Procurement policies and procedures in place	Date	Date	TBD	TBD	TBD	TBD	TBD	TBD	TBD

Of signed Annex II: Indicator Baselines and Targets										
Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
				2013	2014	2015	2016	2017	2018	
Output	Training plans developed and implemented for managers	Percentage	Level	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Output	New plans created and adopted by ESCOM Board	Percentage	Level	TBD	TBD	TBD	TBD	TBD	100	100
Output	Financial Plans updated	Date	Date							
Output	ESCOM Public Annual Report and Audited Financial Statements	Number	Level	0	1	1	1	1	1	5
Output	Non-technical loss reduction study	Date	Date	0						
Output	Turnaround Support Team deployed	Date	Date	0						
Regulatory Strengthening Activity										
Output	Life line tariff access	Number	Level	0						
Output	Cost of supply	US Cents / kWh	Level	0.08	0.12	0.12	0.12	0.12	0.12	0.12

Of signed Annex II: Indicator Baselines and Targets										
Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
				2013	2014	2015	2016	2017	2018	
Output	Actual Tariff Levels and Schedules	US Cents / kWh	Level	0.08	0.10	0.12	0.12	0.13	0.13	0.13
Output	Approved Tariff Levels and Schedules	US Cents / kWh	Level	0.06	0.10	0.12	0.12	0.13	0.13	0.13
Output	Tariff indexation framework implemented on time	Ratio	level	1	1	1	1	1	1	1
Output	Tariff application processing time	Days	Level	180				180		180
Output	Tariff Indexation Framework	Date	Date		1-Jan-14					1-Jan-14
Output	MERA Public Annual Report and Audited Financial Statements	Number	Cumulative	1	1	1	1	1	1	5
Output	MERA Resolutions	%	Level	100	100	100	100	100	100	100
Output	Power Market Structure report produced	Date				31-Dec-14				

Of signed Annex II: Indicator Baselines and Targets										
Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
				2013	2014	2015	2016	2017	2018	
Output	Power Market Structure report produced - ToRs developed	Date	Date		31-Dec-13					31-Dec-13
Output	Power Market Structure report produced - Contract signed	Date	Date			30-Jun-14				30-Jun-14
Output	Power Market Structure report produced - Report finalized	Date	Date			31-Dec-14				31-Dec-14
Output	Power Market Structure report produced - Implementation of new power market structure plan	Date	Date			30-Jun-15	30-Jun-16	30-Jun-17	30-Jun-18	30-Jun-18
Output	Energy policy reviewed - Internal review meetings completed and issues paper developed	Date	Date		31-Dec-13					31-Dec-13
Output	Energy policy reviewed - Stakeholder consultations developed	Date	Date		30-Jun-14					30-Jun-14
Output	Energy policy reviewed - Draft policy document developed	Date	Date			31-Dec-14				31-Dec-14
Output	Energy policy reviewed - Public consultative meetings held	Date	Date			31-Dec-14				31-Dec-14
Output	Energy policy reviewed - Final draft energy policy produced	Date	Date				30-Jun-16			30-Jun-16

Of signed Annex II: Indicator Baselines and Targets										
Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
				2013	2014	2015	2016	2017	2018	
Output	Electricity Act reviewed - ToRs developed	Date	Date				31-Dec-15			31-Dec-15
Output	Electricity Act reviewed - Contract signed	Date	Date				30-Jun-16			30-Jun-16
Output	Electricity Act reviewed - Report finalized	Date	Date					31-Dec-16		31-Dec-16
Output	Rural Electrification Act amended - ToRs developed	Date	Date				31-Dec-15			31-Dec-15
Output	Rural Electrification Act amended - Contract signed	Date	Date				30-Jun-16			30-Jun-16
Output	Rural Electrification Act amended - Report finalized	Date	Date					31-Dec-16		31-Dec-16
Output	Standard Power Purchasing Agreement gazetted	Date	Date		30-Jun-14					30-Jun-14
Output	Renewable Energy Feed-in Tariff gazetted	Date	Date		30-Jun-14					30-Jun-14
Output	Cost-reflective levies and charges	Date	Date							TBD
Output	Exchange visits with regulators	Number	Cumulative							TBD
Output	Phased implementation plan for cost-reflective tariff regime developed	Date	Date							TBD

Of signed Annex II: Indicator Baselines and Targets										
Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
				2013	2014	2015	2016	2017	2018	
Output	Tariff design efficiency that includes a Lifeline Tariff developed	Yes/No	Level			1	1	1	1	1
Process	Corporate governance benchmarking study - ToRs developed	Date	Date		30-Jun-14					30-Jun-14
Process	Corporate governance benchmarking study - Contract signed	Date	Date			31-Dec-14				31-Dec-14
Process	Corporate governance benchmarking study - Report finalized	Date	Date			30-Jun-15				30-Jun-15
Process	Sector benchmarking study completed - ToRs developed	Date	Date		30-Jun-14					30-Jun-14
Process	Sector benchmarking study completed - Contract signed	Date	Date			31-Dec-14				31-Dec-14
Process	Sector benchmarking study completed - Report finalized	Date	Date			30-Jun-15				30-Jun-15
Process	Peer reviews conducted	Number	Level	1		1				1
Power Sector Reform Project Process Milestones										
Process	Temporary Employment Generated	Number	Level	0						

Of signed Annex II: Indicator Baselines and Targets										
Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
				2013	2014	2015	2016	2017	2018	
Process	Temporary Employment Generated - Male	Number	Level	0						
Process	Temporary Employment Generated - Female	Number	Level	0						
Process	Percent disbursed of signed power sector reform project contracts	%	Level	0						
Process	Value of signed power sector reform project contracts	USD	Level	0						
Process	Value of signed ESCOM Turnaround Activity contracts	USD	Level	0						
Process	Value of signed Regulatory Strengthening Activity contracts	USD	Level	0						
Process	Value disbursed of signed power sector reform project contracts	USD	Level	0						
Process	Value disbursed of signed ESCOM Turnaround Activity contracts	USD	Level	0						

Of signed Annex II: Indicator Baselines and Targets										
Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
				2013	2014	2015	2016	2017	2018	
Process	Value disbursed of signed Regulatory Strengthening Activity contracts	USD	Level	0						
Environment and Natural Resources Management Project										
Outcome	Electricity not generated due to weeds and sedimentation	MWh	Level	4,640						
Outcome	Electricity not generated due to weeds and sedimentation - Nkula	MWh	Level	3,129						
Outcome	Electricity not generated due to weeds and sedimentation - Tedzani	MWh	Level	562						
Outcome	Electricity not generated due to weeds and sedimentation - Kapichira	MWh	Level	949						
Outcome	Distribution of invasive aquatic species	km2	Level	TBD						TBD
Outcome	Distribution of invasive aquatic species – Upper Shire River	km2	Level	TBD						TBD
Outcome	Distribution of invasive aquatic species – Middle Shire River	km2	Level	TBD						TBD

Of signed Annex II: Indicator Baselines and Targets										
Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
				2013	2014	2015	2016	2017	2018	
Outcome	Water turbidity	Mg/L	Level	TBD						TBD
Outcome	Improved yields among men and women with natural resources-based livelihoods in the Shire River basin	kg/hectare	Level	TBD						TBD
Outcome	Improved Yields - Male	kg/hectare	Level	TBD						TBD
Outcome	Improved Yields - Female	kg/hectare	Level	TBD						TBD
Outcome	Women's inclusion in natural resources management	%	Level	TBD						TBD
Weed and Sediment Management Activity										
Output	Average weed management expenses per ton of weed harvested	USD	Cumulative	259,497						TBD
Output	Amount of weed harvested at Liwonde barrage	Metric Tons	Cumulative	2,561						TBD
Output	Average sediment management expenses per ton of sediment harvested	USD	Cumulative	71,028						TBD
Output	Percentage of head pond available	%	Cumulative	50						

Of signed Annex II: Indicator Baselines and Targets										
Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
				2013	2014	2015	2016	2017	2018	
Output	Percentage of head pond available - Nkula	%	Level	50						75
Output	Percentage of head pond available - Tedzani	%	Level	50						75
Output	Percentage of head pond available - Kapichira	%	Level	50						75
Environment and Natural Resources Management Activity										
Output	Operational payment for Ecosystem Services mechanism established.	Date	Level	0						TBD
Output	Grant agreements in place with civil society and private sector service providers	Number	Level	0						TBD
Output	Number of feeding scars on sampled water hyacinth colonies	Number	Level	0						TBD
Output	Plan for sustainability of the payment for ecosystem services mechanism	Number	Level	0	TBD	TBD	TBD	TBD	TBD	TBD
Social and Gender Enhancement Fund										

Of signed Annex II: Indicator Baselines and Targets										
Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
				2013	2014	2015	2016	2017	2018	
Output	Community members engaged in on-going community level dialogues	Number	Level	0	TBD	TBD	TBD	TBD	TBD	TBD
Output	Community members engaged in on-going community level dialogues - Male	Number	Level	0	TBD	TBD	TBD	TBD	TBD	TBD
Output	Community members engaged in on-going community level dialogues - Female	Number	Level	0	TBD	TBD	TBD	TBD	TBD	TBD
Output	Leaders trained on social/gender/natural resource management issues	Number	Cumulative	0	TBD	TBD	TBD	TBD	TBD	TBD
Output	Leaders trained on social/gender/natural resource management issues - Male	Number	Level	0	TBD	TBD	TBD	TBD	TBD	TBD
Output	Leaders trained on social/gender/natural resource management issues - Female	Number	Level	0	TBD	TBD	TBD	TBD	TBD	TBD
Output	Women provided with leadership training	Number	Level	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Output	Women and Men who are members of community/village level committees	Number	Level	0	TBD	TBD	TBD	TBD	TBD	TBD

Of signed Annex II: Indicator Baselines and Targets										
Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
				2013	2014	2015	2016	2017	2018	
Output	Women and Men who are members of community/village level committees - Male	Number	Level	0	TBD	TBD	TBD	TBD	TBD	TBD
Output	Women and Men who are members of community/village level committees - Female	Number	Level	0	TBD	TBD	TBD	TBD	TBD	TBD
Social and Gender Enhancement Fund										
Process	Temporary Employment Generated	Number	Level	0	TBD	TBD	TBD	TBD	TBD	TBD
Process	Temporary Employment Generated - Male	Number	Level	0	TBD	TBD	TBD	TBD	TBD	TBD
Process	Temporary Employment Generated - Female	Number	Level	0	TBD	TBD	TBD	TBD	TBD	TBD
Process	Percent disbursed of signed ENRM_SGA project contracts	Percentage	Level	0	TBD	TBD	TBD	TBD	TBD	TBD
Process	Value of signed contracts for ENRM Project	USD	Level	0	TBD	TBD	TBD	TBD	TBD	TBD
Process	Value of signed Weed & Sediment Management Activity contracts	USD	Level	0	TBD	TBD	TBD	TBD	TBD	TBD

Of signed Annex II: Indicator Baselines and Targets										
Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
				2013	2014	2015	2016	2017	2018	
Process	Value of signed ENRMAP contracts	USD	Level	0	TBD	TBD	TBD	TBD	TBD	TBD
Process	Value of signed SGEF Activity contracts	USD	Level	0	TBD	TBD	TBD	TBD	TBD	TBD
Process	Value disbursed of signed contracts for ENRM Project	USD	Level	0	TBD	TBD	TBD	TBD	TBD	TBD
Process	Value disbursed of signed Weed & Sediment Management Activity contracts	USD	Level	0	TBD	TBD	TBD	TBD	TBD	TBD
Process	Value disbursed of signed ENRMAP contracts	USD	Level	0	TBD	TBD	TBD	TBD	TBD	TBD
Process	Value disbursed of signed SGEF Activity contracts	USD	Level	0	TBD	TBD	TBD	TBD	TBD	TBD

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 15: 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 16: 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.

ERR linked	Level	Indicator or Result Statement	Unit	Definition	Modification	Original Assumptions & Rationale	Justification for Change
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 household or firm	New data available from ESCOM Sales Statistics
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		
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	(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
				number of hours in a month			
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 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 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	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 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		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*	(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
				of installed capacity at Tedzani (MWh)			
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
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

ERR linked	Level	Indicator or Result Statement	Unit	Definition	Modification	Original Assumptions & Rationale	Justification for Change
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 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

ERR linked	Level	Indicator or Result Statement	Unit	Definition	Modification	Original Assumptions & Rationale	Justification for Change
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
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)}**	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

ERR linked	Level	Indicator or Result Statement	Unit	Definition	Modification	Original Assumptions & Rationale	Justification for Change
					(2) We propose to change the indicator baseline value from 21.8% to 22.0%		
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}** (3) We propose to add source of data from Power Trading Report	To measure losses and performance specific to ESCOM's transmission business	New baseline data available from ESCOM Generation Statistics
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)

ERR linked	Level	Indicator or Result Statement	Unit	Definition	Modification	Original Assumptions & Rationale	Justification for Change
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 **Percentage of time within ±10% voltage range at Mlangeni 66kV**		DQR Main Report, Vol. II Recommendation, p. 42
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

ERR linked	Level	Indicator or Result Statement	Unit	Definition	Modification	Original Assumptions & Rationale	Justification for Change
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 added by activity**	To measure distribution capacity before and after Compact implementation	DQR Main Report, Vol. II Recommendation, p. 45
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							

ERR linked	Level	Indicator or Result Statement	Unit	Definition	Modification	Original Assumptions & Rationale	Justification for Change
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
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

ERR linked	Level	Indicator or Result Statement	Unit	Definition	Modification	Original Assumptions & Rationale	Justification for Change
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 **Percentage of total managers trained in a year** (3) We propose to change the unit of measure from Number 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
					(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**	Key reforms needed to improve market structure and encourage private investment	DQR Main Report, Vol. II Recommendation, p. 51

ERR linked	Level	Indicator or Result Statement	Unit	Definition	Modification	Original Assumptions & Rationale	Justification for Change
					(2) We propose to change the indicator unit from 'number' to 'Yes/No'		
ENVIRONMENT AND NATURAL RESOURCES PROJECT INDICATORS							
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)**		

ERR linked	Level	Indicator or Result Statement	Unit	Definition	Modification	Original Assumptions & Rationale	Justification for Change
					(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 and field observations	(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
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	(1) We propose to change the unit value from	To measure outages due to ENRM problems, and thus performance of WSM project	New baseline data available from ESCOM ENRM Statistics

ERR linked	Level	Indicator or Result Statement	Unit	Definition	Modification	Original Assumptions & Rationale	Justification for Change
				at Liwonde barrage per year	**"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		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.
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

ERR linked	Level	Indicator or Result Statement	Unit	Definition	Modification	Original Assumptions & Rationale	Justification for Change
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
No	Output	Women enrolled in leadership training	Number	Number of women who enroll 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 17: 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%

			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	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
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

			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	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%															
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%

			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**
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															
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															