MEMORANDUM OF UNDERSTANDING BETWEEN THE MINISTRY OF FINANCE, ECONOMIC PLANNING AND DEVELOPMENT OF THE GOVERNMENT OF MALAWI AND THE MILLENNIUM CHALLENGE CORPORATION

This Memorandum of Understanding ("***MOU***") is made between the Government of the Republic of Malawi acting through its Ministry of Finance, Economic Planning and Development (the "***Government***"), represented by the Secretary to the Treasury ("***ST***") and the Millennium Challenge Corporation ("***MCC***"), hereinafter jointly referred to as the "***Participants.***"

PREAMBLE

The Government and the United States of America, acting through MCC, entered into the Millennium Challenge Compact dated April 7, 2011 (the "***Compact***") for the purpose of reducing poverty through economic growth in Malawi. The Compact expired on September 20, 2018.

Recognizing that the effects of the Compact program will be long-ranging and its impact on reducing poverty may not be measurable for several years after the Compact's expiration, the Participants have developed a post-Compact monitoring and evaluation plan designed to assist with the on-going observance of results and impacts of the Compact program (the ***"Post-Compact M&E Plan"***).

In addition, MCC has engaged, and each of the Participants may in the future engage, one or more service providers (the "***Service Providers***") to collect, review and analyze data resulting from the Compact.

MCC and the Government wish to cooperatively monitor the results and evaluate the impacts of the Compact on reducing poverty through economic growth in Malawi for the next five years, and in order to achieve this common goal, intend to collaborate as set forth in this MOU.

Article 1

OBJECTIVE

The objective of this MOU is to facilitate the continued monitoring of the results of the Compact and timely delivery of independent evaluations of the Compact's impact on reducing poverty through economic growth in Malawi.

Article 2

AREAS OF COOPERATION

The Government and MCC express their intent to cooperate to fulfil the objective by undertaking the tasks and responsibilities set forth in the attached Annex.

Article 3
COMMUNICATIONS

(1) MCC and the Government endeavor to communicate with each other to coordinate their efforts under this MOU.

(2) For all purposes of this MOU, the MCC and the Government will be represented by the persons holding or acting in the following positions (the "***Representatives***"):

(a) For MCC: Vice President for the Department of Compact Operations. As of the signing of this MOU the person holding this position is ***Ms. Kyeh Kim***.

(b) For the Government: Secretary to the Treasury, Ministry of Finance, Economic Planning and Development. As of the signing of this MOU the person holding this position is ***Mr. Ben Botolo***.

(3) The Representatives may each designate one or more officials who may represent the respective Participants under this MOU, other than for purposes of modifying or discontinuing this MOU (which may only be undertaken by the Representatives). Such officials will function as the primary contact for all substantive issues under this MOU.

(a) MCC designates the official holding the position of Managing Director Monitoring and Evaluation, Department of Policy and Evaluation. As of the signing of this MOU the person holding this position is ***Ms. Berta Heybey***.

(b) The Government designates the official holding the position of Director of Monitoring and Evaluation Division of the Ministry of Finance, Economic Planning and Development. As of the signing of this MOU the person holding this position is ***Ms. Sophie Kang'oma***.

Article 4

MODIFICATION, DURATION AND DISCONTINUATION

(a) This MOU will commence on the date of the last signature below and is expected to continue for approximately five (5) years until September 20, 2023, which is the fifth anniversary of the Compact's expiration date of September 20, 2018.

(b) The Participants may extend or modify this MOU in writing signed by both Representatives; provided, however, that for modifications to the Annex, the officials identified in 3 above shall have the authority to approve and sign such modifications.

(c) MCC or the Government may discontinue this MOU at any time by providing written notice to the other Participant, but should endeavor to provide at least thirty (30) days' written notice to the other Participant.

Article 5
EFFECT OF THIS MOU

(1) This MOU does not constitute a legally binding commitment by the Participants and nothing contained in this MOU is intended to be construed as creating any financial obligation or commitment on the part of MCC, the United States Government, or the Government of Malawi to provide funding or assistance in relation to the proposed activities contemplated hereunder or any other project or program in Malawi. Neither of the Participants shall have any responsibility for any expenses incurred by the other Participant relating to this MOU. This MOU does not give rise to rights or obligations under international or domestic law.

(2) This MOU is not intended to affect the separate and unique missions, mandates, and accountabilities of the Participants. As independent institutions, the Participants acknowledge that any cooperation contemplated by this MOU is subject to the Participants' respective policies, procedures, funding constraints, and legal and regulatory constraints.

The undersigned being the duly appointed representatives of the Parties, sign this MoU on this ...26th..... day of .....February....., 2019

For MCC

By: _____

Ms. Kyeh Kim
Acting Vice President of Department of Compact Operations

Date: 2/26/2019

For Government

By: _____

Mr. Ben Botolo
Secretary to the Treasury
Government of Malawi Ministry of Finance, Economic Planning and Development

Date: 1/18/2019

ANNEX: Intended Actions by the Ministry of Finance, Economic Planning and Development and MCC

MCC and the Government intend to cooperate to fulfill the objective of this MOU in the following manner:

1. The Ministry of Finance, Economic Planning and Development will endeavor to:

- Serve as the primary Government point of contact related to the Compact monitoring and evaluation (M&E) activities after Compact close on September 20, 2018;

- Before Compact close on September 20, 2018, collaborate closely with MCA-Malawi to develop a Post-Compact M&E Plan. Review and revise the Post Compact M&E Plan as necessary after Compact close.

- As described in the Post-Compact M&E Plan, complete the following monitoring and reporting functions:

    - Align post-Compact M&E tasks into the overall set-up for national M&E management, including monitoring databases, reporting systems, surveys and other evaluation data, GIS information, and any other data sources and systems used for the national M&E function;
    - Liaise with other Government entities involved in or that benefit from the Compact program to collect required quarterly and annual performance data and related documentation for Compact components and ensure that it is submitted to MCC by the times specified in the Post-Compact M&E Plan and to appropriate standards of quality as also specified in the Post-Compact M&E Plan, and that such other Government entities are receiving adequate support to perform their M&E functions;
    - Ensure that data are disaggregated by sex, age and income level, where practicable, and help ensure that gender issues are appropriately incorporated into evaluations as described in the Post-Compact M&E Plan;
    - Directly participate in the monitoring of individual Compact components through site visits, review of project reports and primary data, and review of secondary data as described in the Post-Compact M&E Plan; and
    - If needed, participate in and/or oversee the work of data quality reviewers, assess data quality review results and serve as primary point of contact to implement any recommended changes or corrections, and conduct intermittent data quality checks to provide additional data quality oversight as described in the Post-Compact M&E Plan.

- As described in the Post-Compact M&E Plan, support the following evaluation,

dissemination, coordination, and learning synthesis functions:

- Conduct synthesis of monitoring and other data to assess Compact effectiveness and whether objectives were met as described in the Post-Compact M&E Plan;
- Conduct technical reviews (and coordinate same by other relevant Government agencies) of all evaluation and survey deliverables, and key project performance deliverables;
- Facilitate input on evaluation deliverables, and provide official Government responses on evaluations final reports;
- Facilitate in-country evaluation activities (e.g., writing letters informing stakeholders of upcoming data collection activities and, where relevant, encouraging cooperation) and in-country dissemination of evaluation findings;
- Coordinate in-country evaluation results dissemination activities including but not limited to stakeholder workshops and individual meetings;
- Identify opportunities to apply the learning from evaluations to future Government and Compact design and implementation; and
- Liaise with Ministry of Finance, Economic Planning and Development and other Government public outreach staff to incorporate Compact results and monitoring data and information into external communication products and to ensure that performance results are communicated to the public (this includes dissemination of evaluation results and facilitation of related in-country presentations and posting reports and public-use data on the Ministry of Finance, Economic Planning and Development website).

- Provide all human, financial, and other resources necessary to effectively carry out the activities described above.

2. MCC will endeavor to:

- Contract and manage independent evaluators and data collectors whose activities extend into the post-Compact period; and

- Facilitate evaluator review and consideration of Malawi stakeholder input into the evaluations.

- Provides guidance and training to the country on the detailed requirements for preparing post-compact reports.

GOVERNMENT OF MALAWI

Post-Compact M&E Plan

Monitoring and Evaluation Division
Ministry of Finance, Economic Planning and Development
PO Box 30049
Lilongwe 3
Malawi

January 2019

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1. PREAMBLE

This Post Compact Monitoring and Evaluation ("*M&E*") Plan is part of the action plan set out in the Millennium Challenge Compact (the "*Compact*") signed on April 7, 2011 between the United States of America, acting through the Millennium Challenge Corporation ("*MCC*"), and the Republic of Malawi, acting through its government (the "*Government*"). The Post Compact M&E Plan serves as a guide for monitoring the sustainability of the Compact investments, and is required by the MCC Policy for Monitoring and Evaluation of Compacts and Threshold Programs[1] ("*M&E Policy*"). As stated in the M&E Policy: "MCC and MCA, along with the designated representative for Post Compact M&E if appropriate, will develop a Post Compact M&E Plan designed to observe the sustainability of benefits created under the compact in conjunction with the Program Closure Plan and within 90 days after CED. This plan should describe ongoing and future monitoring and evaluation activities, identify the individuals and organizations that would undertake these activities, provide a budget framework for future monitoring and evaluation which draws upon both MCC and country resources, and document the role the partner country will play in results dissemination." "MCA" in the above quoted paragraph refers to MCA-Malawi, the entity designated by the Government pursuant to the Compact to implement the Compact Program.

The Post Compact M&E Plan may be modified or amended based on the agreement between the Government's designated representative and MCC. As spelled out in the MCA-Malawi Program Closure Plan, the designated representative for Post-Compact M&E activities is the Monitoring and Evaluation Division in the Ministry of Finance, Economic Planning and Development ("*MoFEPD*").

[1] https://www.mcc.gov/resources/doc/policy-for-monitoring-and-evaluation

2. LIST OF ACRONYMS

CDM	Centre for Development Management
CT	Current Transformer
Dx	Distribution
EGENCO	Electricity Generation Company
EIRR	Economic Internal Rate of Return
ENRM	Environment and Natural Resource Management
ES	Enterprise Survey
ESCOM	Electricity Supply Corporation of Malawi
FDGs	Focus Group Discussions
GDP	Gross Domestic Product
GOM	Government of Malawi
Gx	Generation
IDP	Infrastructure Development Project
IHS	Integrated Household Survey
IPP	Independent Power Producers
IRP	Integrated Resource Project
ITT	Indicator Tracking Table
kV	Kilovolts
kWh	Kilowatt hours
L&T	Larsen and Toubro
M&E	Monitoring and Evaluation
MCA-Malawi	Millennium Challenge Account – Malawi
MCC	Millennium Challenge Corporation
MIS	Management Information System
MNREM	Ministry of Natural Resources Energy and Mining
MoFEPD	Ministry of Finance Economic Planning and Development
MU	Metering Unit
MW	Megawatt
MWh	Megawatt hours
NPV	Net Present Value
PSRP	Power Sector Reform Project
PAP	Project Affected Persons
SCADA	Supervisory Control and Data Acquisition
SGEF	Social and Gender Enhancement Fund
SGIP	Social and Gender Integration Plan
SI	Social Impact
SWAT	Soil and Water Assessment Tool
VT	Voltage Transformer

3. COMPACT AND OBJECTIVE OVERVIEW

3.1 Introduction

This Post Compact Monitoring and Evaluation (M&E) Plan serves as a guide for monitoring the sustainability of the Malawi Compact investments, and to be aware of variances between targets and actual achievement after the end of the Compact. The plan has been developed by Millennium Challenge Account-Malawi (MCA-Malawi), and GoM's designated representative for post-compact M&E.

Monitoring and evaluation within the framework of the post-compact period is an essential function for the success of the program in connection with a results-based approach. The Post Compact M&E Plan picks up on where the final version of the Malawi Compact M&E Plan left off, with modifications to the monitoring indicators, reporting requirements, updates to the evaluation plan, incorporating the findings of Data Quality Reviews (DQRs) and new roles and responsibilities for Post Compact M&E activities. The plan will be managed by the Monitoring and Evaluation Division within the Ministry of Finance, Economic Planning and Development (MoFEPD), and used in conjunction with other reporting and management tools.

The Post Compact M&E Plan is a tool that provides the following functions:

- Describes post-compact M&E activities for the Malawi Compact projects to determine whether they are achieving the intended results years after compact end date in September 2018;
- Includes all indicators that must be reported to Millennium Challenge Corporation (MCC) and other compact stakeholders. The Indicator Documentation Table in Annex 1 provides an up-to-date detailed definition of each indicator, unit of measurement, source of data, responsible entity, and frequency of reporting. Annex 2 identifies indicator baselines and targets;
- Discusses post-compact reporting requirements and identifies the individuals and organizations that would undertake monitoring and evaluation activities after compact end date;
- Describes post-compact evaluation activities, and provides a budget framework for post-compact monitoring and evaluation which draws upon both MCC and country resources, and
- Documents the role the Government of Malawi (GoM) will play in results dissemination.

The Post Compact M&E Plan may be modified or amended as necessary only with the agreement of both GOM and MCC.

3.2 Program Logic

3.2.1 Compact Goal and Objectives

The Compact Goal is in line with the Malawi Government Growth and Development Strategy II (MGDS II) to reduce poverty through economic growth. Estimated to generate US$567.2 million worth of income benefits over 20 years,[2] the Compact objective is to stimulate growth by raising the

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

profitability and productivity of enterprises and value added production in key growth sectors such as agriculture, manufacturing, mining and service sectors; increasing investment and employment income; reducing energy costs to enterprises and households; and expanding access to electricity for Malawians. It is envisaged that these goals and objectives would be realized through the MCC's investments that are expected to improve the availability, reliability, and quality of power supply in Malawi; increase the throughput capacity and stability of the national electricity grid; increase the efficiency of hydropower generation; and create an enabling environment for private sector participation in the energy sector.

The Malawi Compact was implemented through three projects:

(1) The **Infrastructure Development Project (IDP)** aimed at improving the availability, reliability, and quality of the power supply by increasing the throughput capacity and stability of the national electricity grid and increasing efficiency of hydropower generation through investments in infrastructure development.

(2) The **Power Sector Reform Project (PSRP)** aimed at creating an enabling environment for future expansion of the power sector by strengthening sector institutions and enhancing regulation and governance of the sector by rebuilding ESCOM into a financially strong, well-managed utility and developing a regulatory environment that supports public and private investment in new generation capacity and expanded access.

(3) The **Environment and Natural Resource Management (ENRM) Project** aimed at mitigating the growing problems of aquatic weed infestation and excessive sedimentation in the Shire River Basin. To reduce the costly disruptions to Malawi's hydropower generation, the project invested in weed and sediment management and promotion of improved environmental and natural resource management in upstream areas. The ENRM project also included a Social and Gender Enhancement Fund (SGEF) for the empowerment of men and women to engage in sustainable land management practices.

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

3.2.2 Key Compact Outcomes

The Government of Malawi, with assistance from MCC, has been implementing 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.

Figure 1: Malawi Compact Project Sites

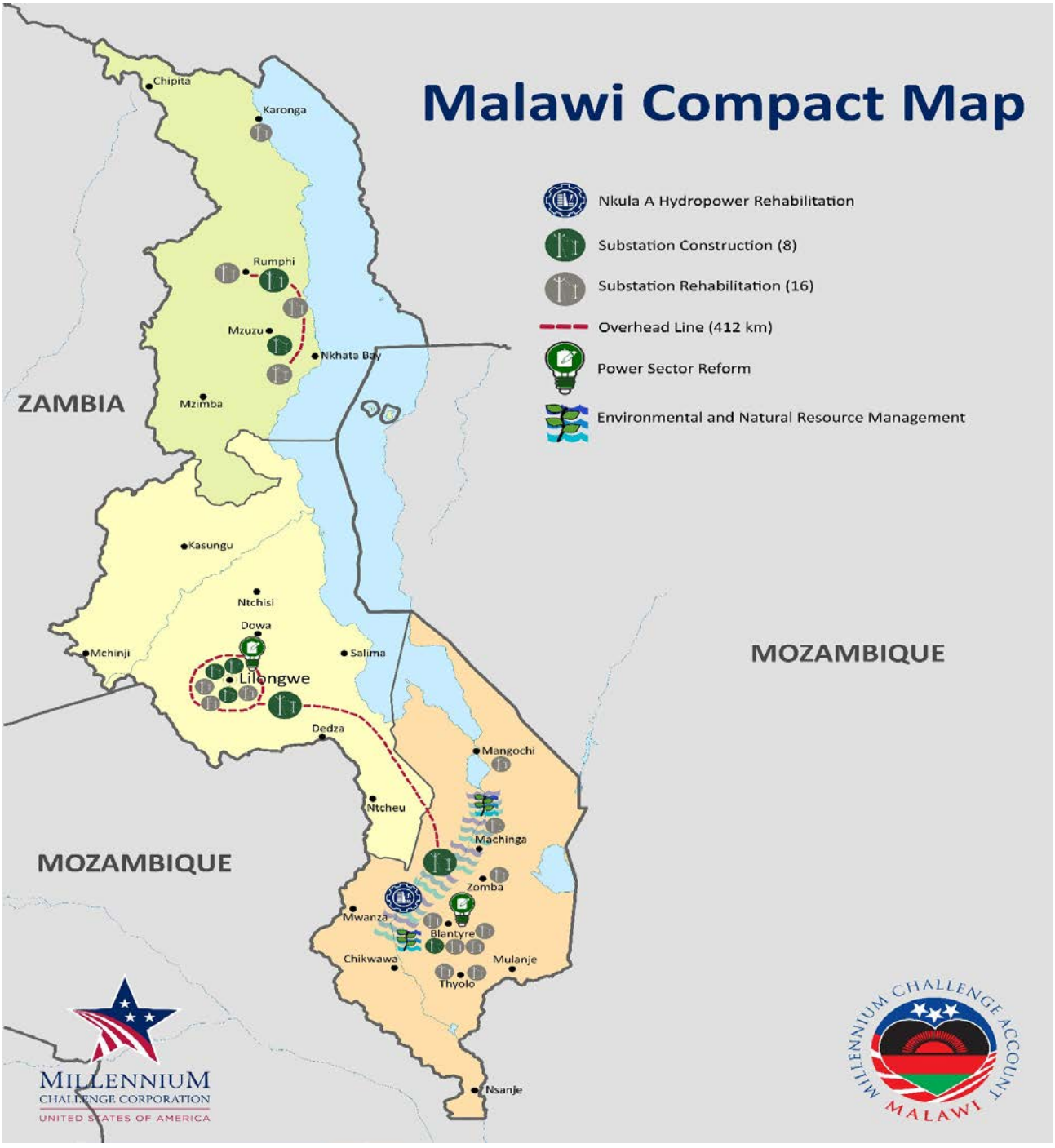
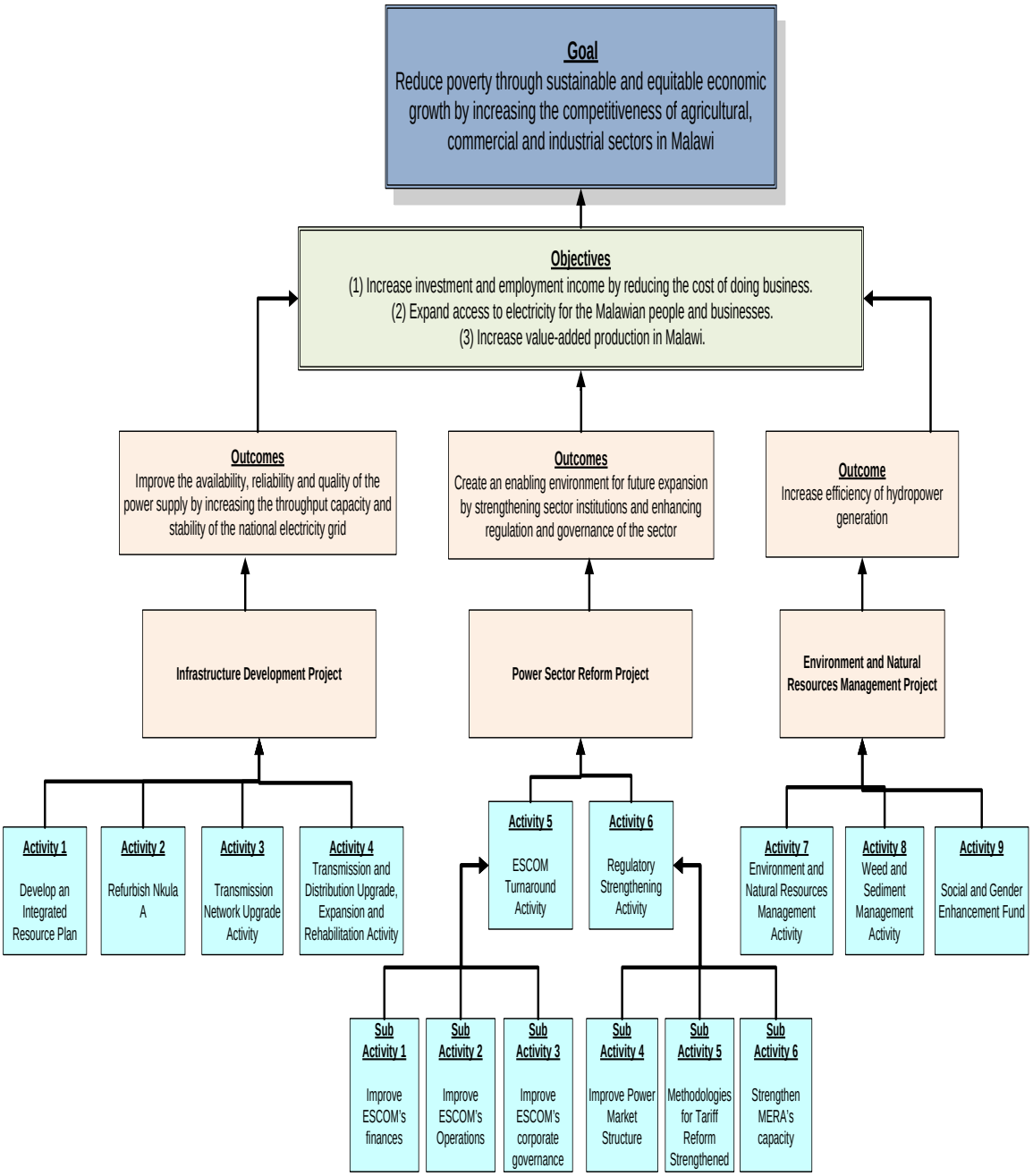


Figure 2: Summary of the Compact structure and objectives.



3.2.3 Project Overview

The following section provides a more detailed description of the individual Compact Projects and their associated activities.

3.2.3.1 Infrastructure Development Project (US$258.6 million)

The Infrastructure Development Project aimed at rehabilitating, upgrading and modernizing 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 that were implemented include:

3.2.3.1.1 *Integrated Resource Plan Activity (IRP)*

The objective of the IRP was 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. The IRP was finalized in April 2010 and submitted to the Government of Malawi through the Ministry of Natural Resources, Energy and Mining. However, the IRP was never adopted by Government.

3.2.3.1.2 *Nkula A Refurbishment Activity*

MCC funding supported 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 from the original 24 MW to 36 MW. The refurbishment was aimed at improving the reliability of the plant, enhance its generation capacity, extend its useful life and thereby avoid a partial or total failure of the plant. The works have been completed and the last trial run for the third turbine was completed on August 24, 2018. The refurbishment of Nkula A is expected to be fully completed in September 2018.

3.2.3.1.3 *Transmission Network Upgrade Activity*

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

1) A 173 km 400 kV voltage power line from Phombeya to Lilongwe which has been completed and was commissioned and energised in September 2018; and
2) A 160 km 132 kV voltage line that includes: 79 km from Chintheche substation to Luwinga substation parallel to the existing 66 kV and 33 kV lines; 49 km from Luwinga substation to New Bwengu substation in the northern region; and 31 km from Nkhoma substation to Bunda turnoff substation in Lilongwe. In addition, a total of 0.3 km of looping in and looping out of 132 kV transmission lines was constructed at Nkhoma substation on August 4-5, 2018 and the remaining looping in and out at Phombeya substation was completed in September 2018.
3) A 34 km 66 kV voltage line that includes: 13 km from Lilongwe A substation to Area 48 substation; 7 km from Area 48 substation to Lilongwe B (Kanengo) substation; 12 km from Lilongwe B substation to Lilongwe C substation in the central region; and 1.84 km from New Bwengu substation to Old Bwengu substation in the north. An

addition of 0.5 km of looping in and looping out of 66 kV voltage lines were constructed at Bunda Turnoff substation and 0.1 km 66 kV voltage line at Kauma substation.

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

This Activity implemented included the following:

1) Up-rating of existing network connections (33 kV and 11 kV). This includes 41.797 km of 33 kV overhead lines in the northern and central region; and 3.396 km of 11 kV underground cables in the northern and southern regions of Malawi;
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).

3.2.3.2 Power Sector Reform Project (US$27.4 million)

The Power Sector Reform Project complemented 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 responsible for Energy ("MNREM"). The Power Sector Reform Project consists of two main activities: the ESCOM Turnaround Activity and the Regulatory Strengthening Activity.

3.2.3.2.1 *ESCOM Turnaround Activity*

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

ESCOM Finances Sub-Activity:

1) Development of a detailed financial model for ESCOM by Ernst &Young which was completed in January 2014 and updated regularly. The model was restructured for use by EGENCO in June 2018;
2) Quarterly and annual reviews of ESCOM's financial statements from 2013-2017 by Ernst & Young;
3) Deployment of a financial turnaround team by Azorom completed in August 2016;
4) Development of a non-technical loss reduction strategy by Azorom completed in August 2016;
5) Assisting ESCOM in rapid billings and collections improvement by Azorom completed in August 2016;
6) Strengthening of ESCOM's internal controls by Azorom completed in August 2016;
7) Create a geographical information system (GIS) database for ESCOM's electricity network by ESCOM and Indra completed in May 2018;
8) Development of a new automated management information system by AH Consulting and Indra which became operational in February 2018 and was fully handed over to ESCOM in September 2018; and

9) Assistance with fixed asset mapping by Azorom completed in August 2016.

ESCOM's Corporate Governance Sub-Activity

1) Twinning/mentoring arrangements or management contract support by Azorom completed in August 2016;
2) Support a performance management system by Azorom completed in August 2016;
3) Support strategic planning by ESCOM's board of directors by Azorom completed in August 2016;
4) Provide technical assistance on corporate performance standards, including a study on best practices and benchmarks for corporate governance by Tetra Tech completed in October 2017;
5) Support an annual performance and procurement audit of ESCOM by Feedback Infra/Graham Carr from 2014 to 2016;
6) Conduct a Social and Gender Institutional Audit by Dr. Maureen Chirwa completed in July 2014;
7) Support the development of a Social and Gender Policy and Plan of Action by Ms. Tinyade Kachika completed in July 2015;
8) Conduct gender training for EGENCO and ESCOM staff. This was implemented in September 2018.

ESCOM's Operations Sub-Activity

1) Support change management efforts that included developing an improved organizational design by Fichtner and completed in August 2015;
2) Design gender equitable human resources strategies;
3) Support the procurement division by strengthening internal control environment supported by CARDNO Emerging markets and completed in May 2018;
4) Develop policies and procedures to implement best practices in procurement by CARDNO Emerging markets and completed in May 2018;
5) Support other operational assistance including live wire repairs, asset management, occupational health and safety, safety and diagnostic equipment and critical spare parts by Azorom and completed in August 2016;
6) Support the development of ESCOM's annual maintenance plan by Azorom and completed in August 2016; and
7) 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 by CARDNO Emerging markets and completed in September 2017.

3.2.3.2.2 *Regulatory Strengthening Activity*

The Regulatory Strengthening Activity also complemented the Infrastructure Development Project and the ESCOM Turnaround Activity by providing support for the Government's policy reform agenda and building capacity in pivotal sector institutions, MERA and MNREM. The objectives of the Regulatory Strengthening Activity were to develop a regulatory environment, consistent with best practices in independent power utility regulation, that 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: this included supporting a cost of service study to determine appropriate

tariff levels and schedules to achieve full-cost recovery, more efficient utilization of electricity and achievement of social objectives. This was implemented by Economic Consultants Associates and the assignment was completed in September 2018.

Policy, Legal and Regulatory Reform: this included support towards the adoption of policy, legal and regulatory changes necessary to implement tariff reform. This included:

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 licensees. Since entry into force in September 2013, MERA has triggered two automatic tariff adjustments and one base tariff review, and two annual adjustments. In addition, MERA authorized a tariff increase in 2018 associated with the introduction of emergency generation capacity.

b) Improving the components and definitions for the tariff adjustment components, or the tariff indexation framework. This sub-activity took into account the social objectives of promoting equitable access to low-income households. This was supported by CRISIL in 2017 and further assistance was given by ECA and completed their contract in September 2018.

MERA Capacity Building Sub-Activity

Training: this included supporting the development and implementation of training of MERA staff and complementary activities designed to develop MERA's capacity for independent, transparent regulatory oversight and ensure social and gender awareness and integration. This was completed in November 2017 by CRISIL Risk and Infrastructure Solutions Limited as part of the Energy Sector Benchmarking study.

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. This was completed in November 2017 by CRISIL Risk and Infrastructure Solutions Limited.

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. This was implemented by AF Mercados and completed in September 2016.

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. This was completed in September 2016 by AF Mercados.

Annual Performance Reporting: Support MERA in developing annual performance reports. Though this activity was part of the scope of work, under the Benchmarking Study done by CRISIL and was completed in November 2017.

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

Market Design: Support MNREM's efforts to study and design a market structure for the power sector; and the building blocks of a bilateral power trade market. This was completed in September 2016 by AF Mercados. This activity also resulted in the 2016 amendment of the Electricity Act and the unbundling of ESCOM to create two utilities – ESCOM (a transmission and distribution company) and EGENCO (a generation company) – and preparation of new regulatory rules and guidelines. Support to unbundle ESCOM and EGENCO was provided by the Government's Department of Human Resources, Management & Development (DHRMD) with funding from MCA-Malawi, and to establish new business units and processes at ESCOM. The Compact also funded work to create an Independent Power Producer (IPP) Framework to facilitate investment in the power sector.

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. Various interventions have been implemented by the MCA-Malawi Communication and Outreach Directorate.

Semi-Annual Reviews: The Government of Malawi and MCC were expected to jointly supervise, through specific milestones, progress on the implementation of the Government's power sector reform agenda in the following areas: ESCOM finances; ESCOM operations; ESCOM corporate governance; tariff reform; MERA governance; and regulatory enabling environment for public and private sector participation. MCA-Malawi developed Semi-Annual Review (SAR) guidelines which were signed on September 20, 2013 by the Secretary of Energy and Mines and the MCA-Malawi CEO. In order monitor progress in implementation of the reforms, MCA-Malawi organized Semi-Annual Review (SAR) forums which were attended by project partners (ESCOM, MERA, EGENCO and MNREM); government officials, CSOs, and private sector representatives. Since 2014, MCA-Malawi organized seven Semi-Annual Reviews.

3.2.3.3 Environmental and Natural Resource Management (ENRM) Project *(US$20.0 million)*

The objective of the ENRM Project was 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 was 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 infestation and siltation affecting hydropower generation, communities around the Shire River basin, and other users dependent on ecosystem services downstream along the Shire River.

3.2.3.3.1 *Weed and Sediment Management Activity*

The ENRM Project included mitigation techniques to reduce the impact of weeds and sedimentation by using mechanical measures at key generation sites or water flow management sites. The design of the project included the following equipment:

Liwonde Barrage: Purchase and use of additional harvester. Two harvesters were bought

including conveyer accessories by JGH/Aquarius and were delivered in December 2017. Additional activities implemented include the purchase of two tipper trucks which were delivered in August 2018.

Nkula Plant: Trash diversion barrier for Nkula head pond. This was a failed procurement in June 2017. Rehabilitation of dredger for Nkula. This was taken out of scope and instead an extension to an existing Dredged Material Placement Area (DMPA) at Nkula HPPs was added, and is expected to be completed by August 2018.

Tedzani Plant: Trash diversion barrier for Tedzani head pond and the purchase and use of dredger for Tedzani. Both sub-activities were dropped for purposes of prioritization based on the level of sedimentation. Tedzani is only 9 km from Nkula and the level of sedimentation is not as high as that of Kapichira and Nkula

Kapichira Plant: The trash diversion barrier for Kapichira head pond was removed. This was replaced with a new activity that aims at the development of a new Dredged Material Placement Area (DMPA) for Kapichira. This is expected to be delivered by November 30, 2018. Purchase and use of dredger for Kapichira expected to be delivered by September 27, 2018 by Ellicott Dredgers. Additional activities at Kapichira include procurement of two tipper trucks and a backhoe loader and were delivered by August 31, 2018.

3.2.3.3.2 *ENRM Activity*

The ENRM Activity included 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 were 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 the interventions targeted the drivers of land-use degradation in the Shire River Basin. The following activities were implemented by 11 NGOs in the upper and middle Shire River.

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

3.2.3.3.3 Social and Gender Enhancement Fund Activity

The Compact also financed a Social and Gender Enhancement Fund that was aimed at complementing and supporting 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 supported activities that

directly or indirectly improve control and sustainable management of resources by women and vulnerable groups. The key priority areas that were implemented under the SGEF activity included the following:

1) Community engagement to improve joint decision making, women's and men's empowerment and sustainable management of natural resources through proven participatory methodologies;
2) Developing community-based tools for improved and equitable land management;
   Leadership Training for Women; and
   Economic empowerment of women through business skills, marketing and/or other approaches.

3.2.3.3.4 Environmental Trust

In addition to the grant facility, an Environmental Trust is envisioned to be the long-term institutional management unit and the basis for projecting continuation of the soil erosion control programs into the future, beyond the termination of the Malawi Compact. Building upon the recommendations of a Trust Feasibility Study, MCA-Malawi recruited an international and/or national NGO under a cooperative agreement, which was responsible for all elements of establishing the Trust approach. The potential post-Compact funding for the Trust will be derived from a combination of resources, such as a payment for ecosystem services, including a potential levy on water and electricity users, as well as active fundraising from donors and downstream stakeholders. The Trust will be managed, and eventually owned, by a Board of Trustees, most likely comprising representatives of ESCOM, EGENCO, private sector organizations with an interest in improved management of the Shire, one of the two Water Boards, civil society, one of the traditional chiefs, and for the life of the Compact, MCA-Malawi. The Board will be structured and charged with the responsibility to maintain a strong, ongoing collaborative relationship between downstream stakeholders and upstream land resource managers.

3.2.3.3.5 Social and Gender Integration

A Social and Gender Integration Plan (SGIP) was developed and the Plan defined all social and gender activities that should be integrated into the Compact projects, and identified key indicators to monitor progress of said activities. The SGIP provided MCC and MCA-Malawi with an adequate tool to ensure that key social gender issues relating to the Compact interventions were adequately addressed throughout the implementation phase, and the SGIP was developed in line with MCC's Gender Policy and the Malawi National Gender Policy.

3.3 Projected Economic Benefits

Based on the cost-benefit analysis for the Compact, the Net Present Value of benefits was estimated at US$567.2 million at a discount rate of 10 percent. 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 estimated Economic Rate of Return (ERR) calculated in 2013 was 18.7%. The ERR was calculated from a benefit-cost analysis describing how the Malawian people will benefit from the MCC investments. Benefits were derived primarily from increases in grid-supplied, low-cost electricity consumption. The increases were

measured in kWh and valued according to the consumer's expected willingness-to-pay (WTP) for electricity (valued at the most likely alternative). The closeout ERR is expected to be calculated based on data from the Indicator Tracking Table (ITT).

Table 1: Economic Rate of Return

	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	18.7	06/24/2013	TBD	TBD

The Compact investments 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 funds were 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.

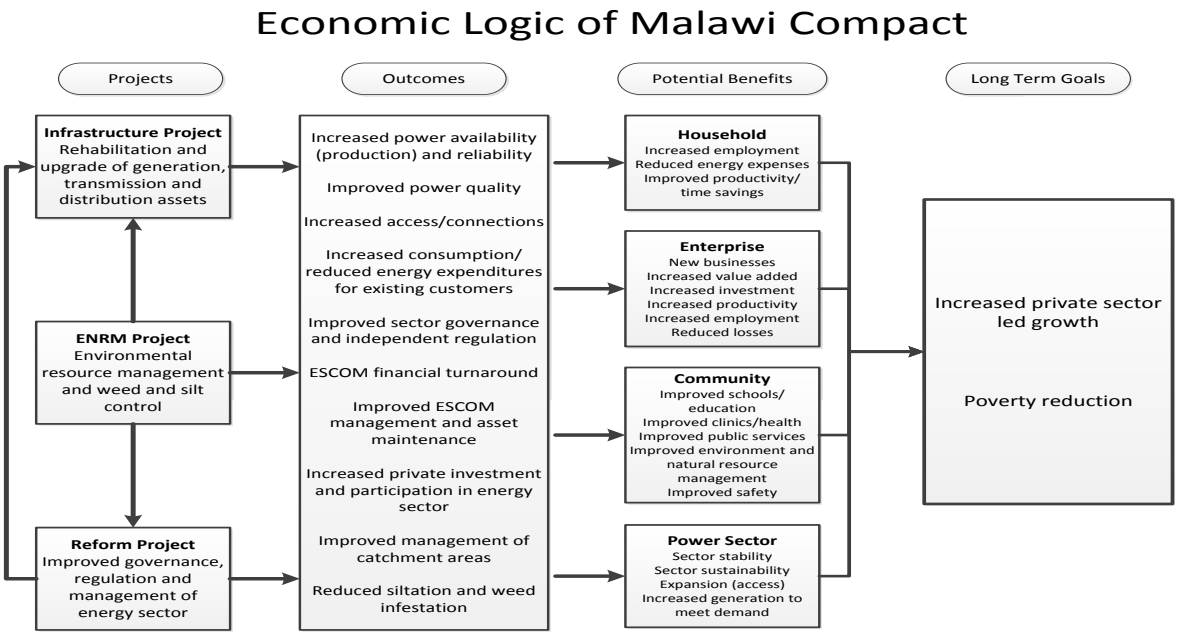


Figure 3: Economic Logic of Malawi Compact

3.4 Program Beneficiaries

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 was considered a broad-based program, as the benefits from electricity generation and transmission span multiple regions in Malawi. The Compact was not considered a national-level program, as the model only projects benefits to those connected to the national grid.

3.5 Other Related Compact Benefits

These estimated economic benefits and poverty reduction impacts do not include potential 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 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.

4. MONITORING COMPONENT

4.1 Summary of Monitoring Strategy

Post Compact outcomes will be monitored systematically and progress reported regularly through a small set of indicators listed in the indicator tracking table (ITT) and broader updates in the Annual Summary Report (ASR). Monitoring data will be analyzed regularly to allow GoM and MCC to track the sustainability of Compact Investments. MCC M&E worked with MCA-Malawi along with the MCC sector experts to select the Post Compact indicators. All indicators were included at the request of a sector expert at MCC to ensure that there was an audience for the Post Compact reports.

The Post Compact M&E plan is framed and constructed using the program logic framework approach that classifies indicators as output, outcome, and impact (goal indicators). This Post Compact M&E Plan only includes indicators at the output and outcome level, as the other two levels are no longer relevant.

- **Outcome** indicators measure intermediate, medium, or long-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.[3] The output indicators presented in the table track the performance of the on-going progress of interventions that were begun under the Compact, but that are continuing into the Post Compact period.

The Indicator Documentation 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) level of disaggregation; (v) data source; (vi) method of collection; (vii) the frequency of reporting; and (viii) party or parties responsible. The definition of the outcome indicators were developed in close coordination between the M&E Units of MCC and MCA-Malawi and are 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 Outcome and Output indicators are derived from Compact documents, Implementing Entities and implementers' work plans, and MCC external reporting requirements.

To ensure that the Program is on track to meet its overall goals and objectives, the monitoring indicators are being 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. Some of the original baselines and targets were revised based on emerging issues as well as submission of revised data by Project Partners. The baselines and target levels for each indicator in the Post Compact M&E Plan have been extracted from the

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

M&E Plan which was operational during the Compact implementation period and included in Annex II.

4.2 Data Disaggregation

The Indicator Documentation Table (Annex 1) identifies which indicators should be disaggregated as feasible and cost-effective, based on gender (individuals), age, region, and income. The select disaggregated figures identified in Annex 1 will be reported to MCC in the Post-Compact ITT. 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.

4.3 Data Quality Reviews (DQRs)

The M&E Division of MoFEPD as a designated representative will be responsible for verifying the accuracy, consistency and quality of data over time across implementing agencies and other reporting institutions. The Malawi Millennium Development (MMD) Trust, which will take over from MCA-Malawi in January 2019, may contract an independent data quality reviewer where necessary. The designated representative will also conduct field visits on a regular basis or whenever requested by MCC, to review the quality of the data gathered through this Post Compact M&E Plan. This exercise will be done in coordination with MCC and the respective project stakeholders.

In August 2013, MCA-Malawi engaged CRISIL Risk & Infrastructure Solutions Ltd. (CRIS) to undertake a Data Quality Review (DQR) assignment. The objective of the assignment was to ensure that the data collected and reported for the Compact program by project partners was accurate and of high quality. The outputs of the exercise achieved were (i) revised indicators, baseline values and targets along with improved data collection and reporting processes; (ii) a skills requirements and capacity building report; and (iii) a DQR manual. The assignment was conducted during the period September 2013 - March 2014.

In December 2014, MCA-Malawi launched the procurement of consultancy services to conduct annual data quality audits (DQA) through the four annual periods covering the financial years 2015 to 2018. Following its selection, CRIS undertook the first annual data quality audit exercise for the base period in April – June, 2015. For the next three periods, MCA-Malawi decided to exercise the options and accordingly CRIS was invited to conduct the second and third DQA exercises, which were completed by CRIS during the periods January-March, 2016 and January – March, 2017 respectively. For the fourth period, conducted the DQA during the period November 2017 – January 2018. The objective of the annual data quality audits is to continue reviewing the quality of data collected and reported for the Malawi Compact M&E framework in order to ensure the accuracy of this data, which is reported on the MCC website, and to improve the quality of future data gathering and reporting efforts. This is expected to ensure the quality and thus the accuracy of interpretation of results from the Compact key performance indicators.

Key tasks carried out under the DQAs included the following:

1. *Review the quality of annual data used to update the Indicator Tracking Table (ITT) submitted to MCC on September 10 of each year:* The data quality audit included:

a) Identifying the margin of error and limitations of each sampled indicator for analytical purposes;
b) Verifying the accuracy of historical data used to calculate M&E Plan indicators;
c) Where errors are identified, re-compile accurate historical data in the appropriate MIS or ITT format, with appropriate documentation;
d) If the accuracy of the data cannot be verified, identify alternative sources of data and if necessary, definition of a new indicator should be recommended and common formats developed.

2. *Follow up on implementation of recommendations made during the Base Period, First Option Period and Second Option Period assignment on improving data collection, collation and analysis:* The key recommendations included, but are not limited to:
    a) Training and Capacity Strengthening;
    b) Equipment and Technology; and
    c) Process and System Level improvements.
    d) Organizational Changes
    e) Sustainability Initiatives

3. *Review whether standardized formats are being used for data collection, collation and analysis by MCA-Malawi and its Project Partners and where applicable, develop/ refine the formats:* One of the DQR deliverables was on the development of a Data Quality Review Manual to guide Project Partners on how they are expected to validate and evaluate the data that they use in reporting on key performance indicators. During the DQAs, CRIS followed up on the usage and implementation of the DQR manual by project partners. Where gaps were identified on lack of use of the manual, a training module should be developed to train the relevant staff.

4.4 Standard Reporting Requirements

Unless otherwise agreed with MCC, the designated representative, M&E Division of MoFEPD, will be responsible for submitting the post-compact Indicator Tracking Table (ITT) and Annual Summary Report (ASR) to MCC, as per the reporting schedule noted at the end of this section. The Post Compact reporting will occur for a period of 5 years (2018-2023). These reports will be submitted to MCC via an email to the Vice President of the Department of Compact Operations at VPOperations@mcc.gov with the subject line "Malawi Post-Compact Reporting" and the dates of report coverage. MCC will provide a template for the ITT.

The Annual Summary Report will include the following:

- A summary of any activities undertaken or continued by GoM Post-Compact that relate to the sustainability of Compact investments (including any issues with operations, maintenance of infrastructure, and resettlement work) as well as complementary activities undertaken by ESCOM, EGENCO, GoM or other donors.
- A Post-Compact ITT using the MCC template, that includes all of the indicators included in Annex 1 of this plan for the preceding calendar year.

- Discussion of any concerns about data quality.
- If applicable, status of outstanding issues for infrastructure components through the end of the defects and liability period.
- Updates on contractual steps towards new generation including such milestones as launching of tenders for IPPs, signing of power purchase agreements (PPAs) or implementation agreements (IAs), funding agreements for public generation facilities, etc.
- Progress on the Mozambique interconnector
- Milestones/progress on establishment of Power Markets Limited including appointment of directors, hiring of staff, beginning of activities
- Tariff adjustments – regular or automatic – made during the period including the rationale and the change in tariff level
- Contractual status of ESCOM MIS to confirm support & maintenance still being provided as anticipated
- Monitoring establishment and flow of funding through the PES mechanism to the Shire BEST;
- Monitoring the completion of ENRM activities such as Dredged Material Placement Areas (DMPAs), delivery and utilization of a Dredger at Kapichira Hydro-power plant; and
- Monitoring of ENRM/SGEF results implemented by the Grantees via District Officials.

The following topics related to the Compact investments under each Project should be addressed in the ASRs:

The Compact invested US$257.1 million under the Infrastructure Development Project towards rehabilitation, upgrade and modernization of EGENCO's generation; and ESCOM's transmission and distribution assets. As part of the Compacts' agreements and obligations, Project Partners including ESCOM, EGENCO and MNREM developed Sustainability Plans of infrastructure investments. In order to follow-up, we request that you send us the information below with regards to sustainability plans:

1. Capacity building - Staff recruitment and training.
2. Stocking of critical spare parts for the maintenance of the installed investments.
3. Acquisition of diagnostic tools for maintenance.
4. Acquisition of supporting equipment.
5. Institution of maintenance, environmental health & safety standards and procedures, including environmental restoration of work sites, accident reports, etc.
6. Financing of operation and maintenance.
7. Monitoring of issues identified post Compact.
8. Progress on any unfinished works during Compact implementation including resettlement efforts and any environmental/social rehabilitation work such as:
    a) Number of Project Affected Persons (PAPs) paid their full compensation relative to expected total number of payments for which government is responsible.
    b) Number of PAPs who have received their second tranche of livelihood input payments relative to the expected total number of eligible PAPs.
    c) Contract execution, deliverables, and payments to SMEC.
    d) Monitoring and identification of defects for the in-kind houses based on the Image Designs monitoring reports.

e) Number of in-kind houses for which all defects have been addressed and contracts closed out of the total number with DNP outstanding.
f) As feasible, monitoring of the livelihood PAPs.
g) Monitoring of encroachment or resettlement within wayleaves under overhead lines, as well as substations.

In addition to sustainability plans, EGENCO and ESCOM committed to ensuring that Social and Gender issues are incorporated in their planning and operations and the key activities targeted included:

1. Prioritizing employment of local workers;
2. Developing a policy for prohibiting sexual harassment of any kind at work place;
3. Providing good working conditions in accordance with Malawi labour laws;
4. Providing free accessible functional gender sensitive grievance redress mechanism; and
5. Performing public awareness campaigns on project activities in nearby locations or villages.

The Compact invested US$25.7 million under the Power Sector Reform Project aimed at 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. The following key issues should be followed up and included in the ASR:

1. Status and implementation of cost – reflective tariff. This should also include progress on implementation of the base tariff according to the plan approved by MERA in October 2018 along with notes on any deviations from that plan with explanation of those deviations
2. Status on ESCOM's financial and operation performance, including explanations for any major changes in status of key financial ratios.
3. Status of implementation of sector restructuring reforms including status of Single Buyer, status of ESCOM and EGENCO legal/financial relationship, and status of implementation of Market Rules and Market Procedures.
4. Progress on sector investment including number of new IPPs or public private partnerships for new electricity supply IPPs entering the sector, total investment (US$) and generation capacity added.

The Compact also invested US$27.9 million in Environment and Natural Resource Management (ENRM) aimed at improving environmental and natural resources management (ENRM) in the Shire River Basin. We would like updates on below:

1. Status on maintenance of weed and sediment management equipment i.e. weed harvesters, dredgers etc.
2. Status of the DMPA.
3. Use and operation of the dredge and DMPA in accordance with the Sediment Management Strategy.
4. Progress on the operations of ENRM Trust including money flowing from the PES to the Trust to finance ENRM and SGEF activities in the Shire River basin.

5. A feasible, observation of results by District officials from ENRM-funded interventions, including survival of trees, sustainability of irrigation systems, reforestation, etc.

The Annual Summary Report is due on March 31st of each year. However during the first year, the ASR will be submitted on a quarterly basis, semi-annually for the second year, and annually thereafter. The Monitoring and Evaluation Division of MoFEPD and MCC will make public the final version of the Annual Summary Report, less the ITT, by posting it on MoFEPD and MCC websites respectively along with other related reports, particularly on indicators' progress towards targets.

The reporting schedule is as follows:

Table 3: Data Collection and reporting schedule

Year	ITT Data Collection	Frequency of Reporting	Annual Report	Stakeholders Providing Data
2019	February, May, August, November	March, June, September, December	March 31	ESCOM, EGENCO, Shire BEST Trust, MNREM, MERA, MMD
2020	February, May, August, November	March, September	March 31	ESCOM, EGENCO, Shire BEST Trust, MNREM, MERA, MMD
2021	February, May, August, November	March	March 31	ESCOM, EGENCO, Shire BEST Trust, MNREM, MERA, MMD
2022	February, May, August, November	March	March 31	ESCOM, EGENCO, Shire BEST Trust, MNREM, MERA, MMD
2023	February, May, August, November	March	March 31	ESCOM, EGENCO, Shire BEST Trust, MNREM, MERA, MMD

5. EVALUATION COMPONENT

5.1 Summary of Evaluation Strategy

While good program monitoring is necessary for program management, it is not sufficient for assessing ultimate results. Therefore, MCC will use different types of evaluations as complementary tools to better understand the effectiveness of its programs. As defined in the MCC M&E Policy, evaluation is the objective, systematic assessment of a program's design, implementation and results. MCC is committed to making the evaluations as rigorous as warranted in order to understand the causal impacts of the program on the expected outcomes and to assess cost effectiveness. The evaluation strategies are based upon rigorous methods that ensure the advantages of neutrality, accuracy, objectivity and the validity of the information. Particularly important are effects on household-level and intra-household material well-being, measured in terms of consumption or income, and firms' net income. This Evaluation Component contains three types of evaluation activities: (i) independent evaluations (impact and/or performance evaluations); (ii) self-evaluation, and (iii) special studies, each of which is further described below. The results of all evaluations will be made publicly available in accordance with the MCC M&E Policy.

Independent Evaluations
According to the MCC M&E Policy, every Project in a Compact must undergo a comprehensive, independent evaluation (impact and/or performance). The next section on Specific Evaluation Plans will describe the purpose of each evaluation, methodology, timeline, required MCC approvals, and the process for collection and analysis of data for each evaluation. All independent evaluations must be designed and implemented by independent, third-party evaluators, which are hired by MCC. If MoFEPD wishes to engage an evaluator, the engagement will be subject to the prior written approval of MCC. Contract terms must ensure non-biased results and the publication of results.

For each independent evaluation, MoFEPD and relevant stakeholders are expected to review and provide feedback to independent evaluators on the evaluation design reports, evaluation materials (including questionnaires), baseline report (if applicable), and any interim/final reports in order to ensure proposed evaluation activities are feasible, and final evaluation products are technically and factually accurate. MoFEPD is expected to facilitate these presentations and coordinate with local stakeholders.

MCC has contracted two independent evaluators, Social Impact (SI) for IDP and PSRP and Mathematica Policy Research for ENRM, who will conduct independent evaluations of all Compact activities. In addition to Post Compact monitoring, final evaluation results will be published both on MCC and GoM website.

5.2 Specific Evaluation Plans

Table 4 summarises the evaluation plans for the Compact.

Table 4: Summary of Evaluations

Evaluation Name	Evaluation Type	Evaluator	Primary or Secondary Methodology	Evaluation Reports
Power Sector Reform Project	Performance	Social Empact	Performance with mixed methods and workflow studies	2020 (Final)
Infrastructure Development Project	Performance	Social Impact	Pre-Post; Interrupted Time Series	2020 (Final)
Environmental and Natural Resource Management Project	Performance	Mathematica	Interrupted time series (ITS), Performance evaluation; Implementation Study; Case studies; Soil and Water Assessment Tool (SWAT) modeling; and remote sensing analysis	2019 (Interim) 2021 (Final)

5.2.1 Power Sector Reform Project

The Power Sector Reform Project evaluation design report, produced by Social Impact, is available here: https://data.mcc.gov/evaluations/index.php/catalog/110/related_materials. The evaluation covers both the ESCOM Turnaround Activity and the Regulatory Strengthening Activity. In addition, the evaluation design report produced for PSRP covers the evaluation of the Infrastructure Development Project, described further below.

The objective of the PSRP performance evaluation is to assess financial, operational and governance changes within the power sector over time using a combination of methods, and to qualitatively consider the extent to which the observed improvements can be attributed to Compact activities.

5.2.1.1 Power Sector Reform Project Evaluation Questions

The evaluation will study the following research questions:

Activity	Research question
Finance	1. Does the financial health of the utility stabilize over the life of the Compact? Are improvements driven primarily by tariff increases, or do efforts to improve collection efficiencies, reductions in losses, and reductions in administrative costs also contribute significantly to improved financial health? If there are no improvements or improvements are minimal, why?
	2. Does ESCOM realize improvements in effectiveness and efficiency over the five years of the Compact in financial planning and billing? To what extent can observed gains be attributed to the Compact? If there are no improvements or the improvements are minimal, why?
Corporate Governance	3. Is the ESCOM Board performing according to existing and any new statues, bylaws, Articles and Memoranda?

Activity	Research question
	4. Does ESCOM independence and the independence of the board increase over the life of the Compact? To what extent do Compact efforts to improve corporate governance explain increased independence? (Independence will be operationalized by examining the make-up of the board and the perceived ability of the board to act independently of government approval.) If there are no improvements or improvements are minimal, why?
	5. What are the observed consequences if any (positive or negative) of any increases in independence?
Operations	6. Does ESCOM realize improvements in effectiveness and efficiency over the five years of the Compact in procurement, outage response, processing new connections, and response to customer problems? To what extent can observed gains be attributed to the Compact? If there are no improvements or the improvements are minimal, why?
	7. Is there a reduction in opportunities for corruption and/or a perception of corruption in procurement, service extension, and billing over the five years of the Compact? To what extent can observed gains be attributed to the Compact? If there are no gains or gains are minimal, why?
	8. Does the quantity and quality of ESCOM communications with the public and the transparency of ESCOM increase over the life of the Compact? To what extent do Compact efforts to improve communications contribute to observed improvements? If there are no improvements or improvements were minimal, why?
	9. Do maintenance expenditures increase and maintenance procedures improve over the life of the Compact? To what extent do Compact efforts to improve maintenance systems contribute to any observed improvements? If there are no improvements or improvements are minimal, why?
	10. If the mentoring program occurs, what specific learning can be attributed to the program? What are examples of experiences from other utilities that were incorporated into ESCOM operations? If there are no improvements or improvements are minimal, why?
Tariff Reform and MERA	11. Are tariffs cost reflective by the end of the Compact? If they are, to what extent did Compact efforts contribute? If they are not cost reflective, why not?
	12. How do stakeholders regard the 2017 tariff process compared to the 2014 tariff process? What improvements can be attributed to the Compact? If there are not improvements, why not?
	13. Are trainings of MERA personnel perceived to be useful by participants six months after training? What evidence do participants provide that they have put training into practice?

Activity	Research question
Enabling Environment for Public & Private Sector Investment	14. Do stakeholders (e.g., potential investors, technical experts, and consumer groups) consider there to be an appropriate environment to incentivize independent power producers at a fair price to Malawian consumers? Why or why not?
	15. At the end of the Compact, have agreements been signed for independent power producers to enter the market? If yes, disaggregate by project and capacity.
Semi-Annual Review and quantitative indicators	16. Do stakeholders perceive the semi-annual review process to have contributed to progress on key reform milestones and broader reform project outcomes? If so, how?
	17. Is ESCOM meeting key performance indicator targets set as part of the Semi Annual Review? Why or why not?
	18. Is ESCOM meeting key performance indicator targets set by MERA? Why or why not?
Cross-cutting survey based	19. Do ESCOM male and female employees' evaluations of various aspects of ESCOM's work, including generation, transmission, distribution, financial management, customer service, billing, procurement, management, maintenance, and strategic communications improve, decline, or stay the same?
	20. Do male and female employees' evaluations of various aspects of ESCOM's human resources policies, including salary, benefits, opportunities for advancement, educational opportunities, training (training needs), promotion processes, recognition of good performance, occupational health and safety, and advancement opportunities for women in ESCOM improve, decline, or stay the same?
	21. Do male and female employees' satisfaction with ESCOM, the direction that ESCOM is heading, and the Compact, increase, decrease, or stay the same? What factors explain variation in employee satisfaction?
Additional	22. Do imbalances between the number of male and female staff within the composition of ESCOM staffing decline over the life of the Compact?
	23. How many new connections are added to the network? What percent are prepaid meters? What percent of existing connections are converted to prepaid metering? Disaggregated by year and connection type.

5.2.1.2 Evaluation Methodology Description

The evaluation of the PSRP will use four data collection activities: (1) quantitative indicators from the M&E Plan and MERA key performance indicators, (2) workflow analyses with relevant units within ESCOM, (3) largely qualitative research activities (with some mini-surveys included), and (4) process evaluation. These activities will occur in three phases: at baseline (conducted in 2015), at midline (conducted in 2016), and after the end of the Compact

(to be conducted in 2019). The evaluation will seek to identify changes over time and then consider the extent to which any observed improvements can be attributed to Compact activities.

5.2.1.3 Data sources

Key data sources for PSRP evaluation include: (1) quantitative indicators from ITT, ESCOM MIS and MERA key performance indicators, (2) workflow analyses with relevant units within ESCOM, (3) largely qualitative research activities (key informant interviews, with some mini-surveys included), and (4) process evaluation. The evaluation is planned to be held in three phases: baseline (2015), midline (2016) and endline (2019). These will be facilitated by Social Impact, contracted by MCC as the Independent Evaluator for PSRP. So far, data collection has been conducted for baseline (February 2015) and midline (November 2016).

Data collection also involves a process evaluation seeks to answers to the following questions for each of the PSRP consultancies:

1. How is the working relationship between PSRP consultants and their counterparts in partner institutions?
2. What is the quality of PSRP consultant deliverables?
3. What are lessons learned from the PSRP consultancies?

The process evaluation includes a review of documentation (e.g., terms of reference, inception reports, and reporting documentation) for each of the consultancies, a short mini-survey to eleven MCC and MCA-Malawi personnel involved in the Malawi Compact, and interviews with the consultants and their point of contacts. Data collection for the process evaluation primarily occurred during February 2015 and November 2016. A summary of consultancies examined are provided in **Error! Reference source not found.**.

Table 5: Consultancies examined in the process evaluation report

Sub-Activity	Consultancy name	Consultant
ESCOM Turnaround Activity: Finance Sub-Activity	Financial Review Consultancy	Ernst and Young
	Financial and Operational Turnaround (FINOP): Finance	Azorom
	ESCOM Management Information System	AH Consulting
ESCOM Turnaround Activity: Operations Sub-Activity	FINOP: Operations	Azorom
	Procurement Strengthening	Cardno
	Performance Audit	Feedback Infra and Graham Carr
ESCOM Turnaround Activity: Corporate Governance Sub-Activity	FINOP: Corporate Governance	Azorom
	High Level Energy Advisor	Govind Saha
	Power Market Restructuring Study	AF Mercados

Sub-Activity	Consultancy name	Consultant
Regulatory Strengthening Activity: Enabling Environment Sub-Activity	Independent Power Producer (IPP) Framework Advisor	SIAL
	The Function and Organizational Review of ESCOM	Department of Human Resource Management and Development
Semi-Annual Review Activity	Semi-Annual Review	n/a

5.2.2 Infrastructure Development Project

The Infrastructure Development Project evaluation is being conducted by Social Impact, and the evaluation design report is available covered under the same report as that for the Power Sector Reform Project, available at the link provided above.

5.2.2.1 Evaluation Questions

Through a rigorous performance evaluation, the evaluation design aims to answer the following core evaluation questions on Compact-wide results, and several complementary research questions:

1. What declines in poverty, increases in economic growth, reductions in the electricity related cost of doing business, increases in access to electricity, and increases in value added production are observed over the life of the Compact?
2. What were the results of the interventions – intended and unintended, positive or negative?
3. Are there differences in outcomes of interest by gender, age and income? Sex and income disaggregated information for businesses and households will be pursued to the extent possible.
4. What are the lessons learned and are they applicable to other similar projects?
5. What is the likelihood that the results of the Project will be sustained over time?
6. At the household level, the evaluations shall focus on the following program/project/activities impacts on household and individuals: income; expenditures, consumption and access to energy; individual time devoted to leisure and productive activities.
7. At the enterprise level, the evaluation shall focus on the impact of the program/project/activities on: business profitability and productivity; value added production and investment; employment and wage changes; energy consumption and sources of energy used; business losses.
8. At the regulatory, institutional and policy level, the evaluation shall explore the potential impacts of the program/project/activities on: utility operating costs and losses; financial sustainability; private investment, particularly in generation; expansion of electricity access for customers, particularly the poor.

In addition, the evaluation of the IDP will also seek to answer the following questions:

1. As a result of the Compact, what are the changes in: (1) energy delivered, (2) technical losses, and (3) forced outages for each subproject?
2. What are beneficiary businesses' consumption/expenditures patterns for different types of energy? How do consumption/expenditure patterns change as a result of improved electricity?

3. Do beneficiary businesses change investments or alter their workforces following improvements in electricity reliability?
4. Does beneficiary male and female entrepreneurs' satisfaction with ESCOM improve over the life of the Compact? Do these entrepreneurs perceive an improvement in the quality of electricity over the life of the Compact? What factors explain variation in satisfaction with ESCOM?
5. Do the attitudes of beneficiary male and female entrepreneurs' towards cost-reflective tariffs improve over the life of the Compact? What factors explain variation in beneficiary male and female entrepreneurs' attitudes towards cost reflective tariffs?

5.2.2.2 *Evaluation Methodology Description*

The IDP evaluation design focuses primarily on an enterprise survey that measures the incremental impacts of improved reliability, quality and access to power by comparing key intermediate outcomes, including changes in business investments and productivity, among businesses with access to infrastructure improvements between baseline and endline. An intensive metering effort will measure the technical benefits of the project, including changes in energy delivered, outages, and quality. This will be complemented by focus groups with residents of beneficiary communities. In addition, some of the activities conducted as part of the PSRP evaluation - specifically work flow analyses of response to outages - will also address IDP benefits made possible by the supervisory control and data acquisition (SCADA) systems.

The baseline Focus Group Discussions were conducted from May to July 2015 involving 27 FGDs with 264 participants from the nine case study communities outlined in the table above. The participants for the focus group discussions were selected based on age, sex, income, electricity access, and level of knowledge of electricity in their household. The endline FGDs will be conducted in 2019 involving the same communities.

The third source of data for IDP is an Enterprise Survey (ES) of firms. Two of the three main objectives of the Compact are related to businesses—to reduce the cost of doing business and to increase value added production— hence it was imperative to have a survey of businesses before and after realization of the Compact's benefits in order to assess achievement of these objectives. The survey focuses on high-energy-use businesses that are very dependent on electricity and thus highly sensitive to improvements in reliability. The ES was designed to collect data for the analysis of the different roles and costs of various energy-related and other inputs to production across high energy-use firms within Malawi, and examine how these factors may impact productivity and profitability. The survey will allow for assessment of whether these relationships vary over time, both before and after IDP investments come online. The survey data will also be used determine which characteristics, if any, predict whether a firm elects to rely on alternate sources of power during outages (rather than idling production). The ES is a panel survey and the baseline data collection was conducted from June 2015 to July 2016 involving a sample size of 1,024 firms which included existing three-phase and maximum demand (MD) customers. An endline Enterprise Survey is planned for 2019.

Other data sources include work flow analyses on outage response as outlined above under PSRP data sources and secondary data such as the Integrated Household Surveys (IHS)

conducted by the National Statistics Office (NSO), World Bank funded Enterprise Surveys; and a survey of Maximum Demand Customers conducted by ESCOM. For IHS4, MCA-Malawi financially supported the data collection process and in return NSO included Compact related questions in the household questionnaire which were administered in Compact impact areas. In total, 591 households were surveyed.

5.2.2.3 *Data Sources*

Data Sources for IDP evaluation will include (1) energy feeder meters procured by MCA-Malawi (2) Enterprise Survey and focus group discussions with beneficiaries; (3) Quantitative data from the ITT and ESCOM MIS; and (4) some of the activities conducted as part of the PSRP evaluation - specifically work flow analyses of response to outages - will also address IDP benefits made possible by the supervisory control and data acquisition (SCADA) systems.

For the energy feeder meters, MCA-Malawi contracted Shenzhen Inhemeter of China to install feeder metering equipment in 29 substations across the country. The equipment includes 37 feeder electronic meters class 0.2S at 66 and 132 kV substations; 100 feeder electronic meters class 0.5S, Metering Units (MUs), Current Transformers (CTs), Voltage Transformers (VTs), and ancillary equipment at 11 and 33 kV substations. MCA-Malawi also contracted Consolidated Power Projects Limited (CONCO), Larsen and Toubro Limited (L&T) and Chint to supply and install instrument transformers at 66 kV and 132 kV. The installation of metering equipment is expected to be finalized by August 31, 2018. Installation of feeder metering will allow for collection of baseline (in 2018) and endline data (in 2019) on the quality of supply within the ESCOM grid to effectively measure the impact of Infrastructure IDP interventions. Implementation of IDP interventions will result in increased energy transmitted through the facilities and this will result from: (i) higher capacity equipment that will allow greater amounts of energy to be delivered over time; (ii) lower outage frequencies and durations; and (iii) lower levels of technical losses. These three factors may be derived from data acquired through metering systems that measure power going through the facilities at relatively small time intervals. Thus, a comparison of kW, outage indicators, and losses before and after the facilities are commissioned will provide an indication of the success of individual sub-projects.

The IDP evaluation also includes household Focus Group Discussions (FDGs) to complement findings from the technical benefits derived from metering data. Data collection for household FDGs will involve nine case study communities based on differences between income, access level, and region/city. The table below outlines the nine communities and selection criteria:

Table 6: FDGs site selected and criteria

	Lilongwe	Blantyre	Mzuzu
Middle-high income with electricity Focus on outages, quality, customer service, and economic decision-making regarding energy use.	Area 18B: (Transmission line)	Limbe Central: Kanjedza (Limbe A substation)	Katoto: New Katoto (transmission)
Lower middle income with electricity Focus on outages, quality, the process of obtaining access, customer service, and economic decision-making regarding energy use.	Area 25C (Transmission line plus new substation)	Blantyre West: Zingwangwa (Ntonda Substation)	Nkhorongo: (Transmission line plus Sonda substation)
Lower middle income without electricity Focus on barriers to access, the process of obtaining access, and economic decision-making regarding energy use.	Area 25B Kabwabwa (Transmission line plus new substation)	Blantyre West: Zingwangwa traditional area (Ntonda Substation)	Chibavi: (Transmission line plus Sonda substation)

5.2.3 ENRM Project

The Environment and Natural Resource Management (ENRM) Project evaluation design report, produced by Mathematica Policy Research, is available here: https://data.mcc.gov/evaluations/index.php/catalog/210/related_materials. The evaluation of the ENRM Project covers all three Activities under the Project.

5.2.3.1 ENRM Project Evaluation Questions

The evaluation of the overall ENRM Project will study the following research questions:

1. How has land use along the Shire River changed during the ENRM project?

2. If the project activities were expanded throughout the area, how would the activities affect sedimentation in the Shire River based on alternative modeling scenarios?
    a. How would reductions in sedimentation affect hydropower production based on the alternative scenarios?

3. Based on the results of each activity's evaluation, which implementation factors supported or hindered the effectiveness of the ENRM project overall?
    a. How did ENRM project implementation vary from what was planned, and why?
    b. How did these changes in implementation affect overall outcomes?

4. Did the ENRM Project achieve its targeted intermediate and final outcomes and contribute to higher-level compact objectives? Why or why not?
    a. Were there any unintended consequence of the program (positive or negative)?

5. Based on the results of each activity's evaluation, what are stakeholders' perceptions of sustainability of outcomes achieved under the ENRM project, and why?
    a. What could or should be done to increase sustainability?

5.2.3.2 ENRM Project Evaluation Methods Description

The evaluation of ENRM will encompass separate evaluations for the WSM activity, the ENRM and SGEF grant facility, the ENRM and SGEF grants, and the Environmental Trust, as well as an evaluation of the overall ENRM Project.

The WSM activity impact evaluation will include an interrupted time series (ITS) analysis to estimate impacts of the activity on the operations and productivity of the hydropower plants. Mathematica will also conduct a qualitative implementation analysis.

The performance evaluations of the ENRM and SGEF grant facility and the Environmental Trust will examine activity implementation, achievement of results, and longer term sustainability. The performance evaluation of the ENRM and SGEF grants will include in-depth qualitative case studies with five grantees to examine activity implementation, changes in sustainable land management practices, changes in gender roles and household decision-making, and sustainability of results.

The mixed-methods evaluation of the ENRM Project will determine how the overall project and individual activities help to improve the efficiency of hydropower generation and reduce costly generation disruptions. Mathematica will conduct a remote sensing analysis to examine land use changes over time in the Shire River Basin, and will also model how changes in land use management affect sedimentation rates in the Shire using the Soil and Water Assessment Tool.

5.2.3.3 Data Sources

Two rounds of qualitative primary data collection have been planned as part of the evaluation of the three activities under the ENRM Project as well as for our overall evaluation of ENRM Project. Mathematica engaged a Malawian data collection firm and conducted the first round of data collection beginning in May 2018 (after the main harvest), in order to assess outcomes near the close of the compact. The second round of data collection has been planned around the same time of year, in mid-2020, to examine effects of ENRM Project activities over a longer term. Both data collection rounds will include qualitative focus groups, key informant interviews, and observational site visits. The exact timing of data collection may vary for each grant evaluation depending on whether the assessment is on planting techniques or the extent of winter cropping. Data collected will often be used for multiple evaluations. Given the overlap in data sources across activity evaluations, Mathematica will collect the data simultaneously across activities to meet the needs of the evaluation in an efficient manner and lessen the burden on the respondents.

6. IMPLEMENTATION AND MANAGEMENT OF M&E

The Monitoring and Evaluation Division of MoFEPD, with financial support from GoM and technical support from MCC and with coordination from Project Partners (ESCOM, EGENCO, MERA, MNREM, NSO, Shire BEST, etc.), will be responsible for management of Post Compact M&E. The M&E Division will be responsible for reporting, analysis and reviewing data quality while collection, compilation, and processing of indicator data will be done by Project Partners. The MCC focal point for monitoring and evaluation will provide technical assistance to the post-Compact monitoring and evaluation team, to facilitate the implementation of specific activities in accordance with existing procedures. The designated entity is expected to conduct the following functions:

- Develop and submit an Annual Summary Report to MCC,
- Serving as the primary point of contact for any questions from MCC, Program Partners (PPs), evaluators, or other parties regarding M&E of the Malawi Compact;
- Review the quality of data for agreed indicators and ensuring that indicators are properly documented,
- Implement a monitoring and evaluation system including the collection, processing, analysis, verification/validation and centralization of information on ITT indicators;
- Communicating with focal persons at reporting entities to validate data submitted per the Post-Compact M&E Plan;
- Disseminating information and results related to program performance and impact in order to ensure transparency through the website and/or any other medium;
- Facilitating participation in M&E activities and attracting the interest of different stakeholders directly or indirectly involved in the conduct of activities and the success of the Compact;
- Facilitating the work of independent evaluation teams, particularly through mission planning support by ensuring the availability of stakeholders for key informant interviews, supporting qualitative and quantitative data collection efforts to be undertaken by the independent evaluators;
- Review and revise the Post Compact M&E Plan as necessary in coordination with MCC M&E ;
- Reviews and provides an official response to each evaluation; helps to coordinate the review of evaluation reports by other government agencies as necessary; and
- Identifies opportunities to apply the learning from the evaluations to project design and implementation; and
- Maintaining stable communications with MCC on topics pertaining to the evaluation of projects implemented by MCA-Malawi.

On other hand, MCC responsibilities post Compact will include:

- Contract and manage independent evaluators;
- Ensure evaluators conduct stakeholder review of evaluation reports;
- Contracts post compact data collection for evaluations; and
- Provides guidance and training to the country on the detailed requirements for preparing the Annual Summary Report.

The Successor Entity is expected:

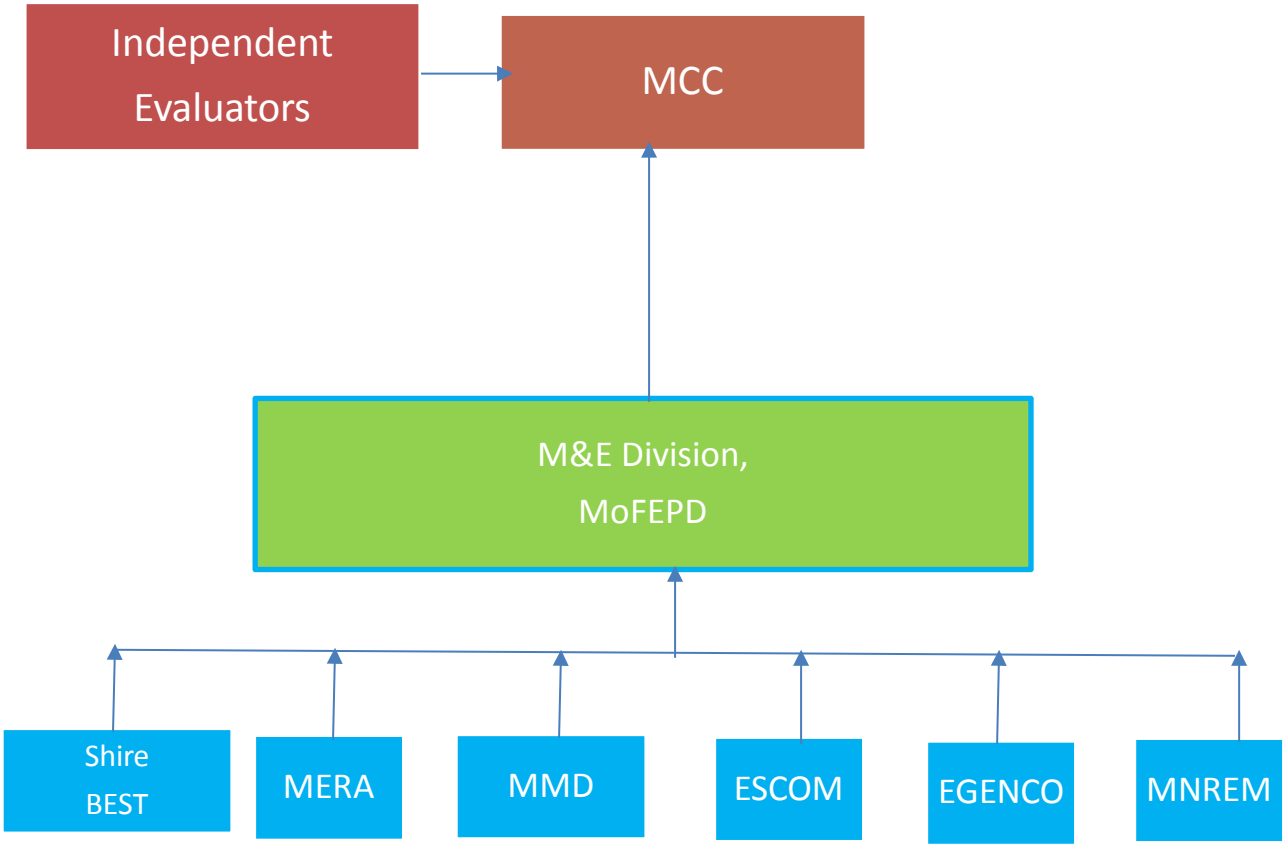
- To provide continuous assistance and advice to the Monitoring and Evaluation Division of MoFEPD on all aspects related to Post Compact M&E, including;
  - Development and submission of the Annual Summary Report to MCC;
  - Coordination of technical M&E aspects with entities responsible for providing primary data for indicators reported by the Monitoring and Evaluation Division of MoFEPD;
  - Dissemination of information, organization (if applicable) of presentations of the results of evaluations and publication on relevant websites;
- To serve as a point of contact for the Monitoring and Evaluation Division of MoFEPD for any inquiries regarding Compact projects and activities implemented; and
- To submit quarterly and annual activity reports to the Monitoring and Evaluation Division of MoFEPD to then be submitted to MCC as an annex to the Annual Summary Report.

Additional M&E functions may be assumed by the Successor entity depending on needs and requirements of MCC.

6.1 Institutional Arrangement and Information Flow Post-Compact

As described above, while MoFEPD will ultimately be responsible for Post-Compact Reporting, data for Post-Compact indicators will be sourced by multiple in-country entities, including entities that provided the same data during the Compact and are familiar with the reporting procedures. Figure 4 illustrates the reporting channels for the Post-Compact period.

Figure 4: Post-Compact M&E Institutional Arrangement



6.1.1 Electricity Supply Corporation of Malawi (ESCOM)

For data submission Post-Compact reporting, the point of Contact for ESCOM will be the Senior M&E Manager who will coordinate M&E requirements for Post-Compact on behalf of ESCOM. In particular, the point of contact will be responsible for submission of Post-Compact related data derived from the ESCOM MIS to M&E Division of MoFEPD. ESCOM will also collaborate with the designated representative in implementation of evaluation activities. For instance, ESCOM will work closely with the M&E Division, Independent Evaluators and MCC on key steps needed to enable a rigorous evaluation based upon the agreed evaluation design and approach. Post-compact responsibilities for ESCOM includes:

- Identifying a focal person to provide continuous assistance and advice to the MoFEPD on all aspects related to Post-Compact M&E of Compact Projects.
- Coordination of technical M&E aspects with entities responsible for providing primary data for indicators as detailed in this Post-Compact M&E Plan;

- Monitoring and maintaining the ESCOM MIS system, to ensure that power sector data to be reported in the Post-Compact ITT are up-to-date;
- Ensuring completeness, accuracy, and integrity of data compiled from within ESCOM before submitting data for the quarterly and annual reports to MoFEPD;
- Submitting power sector data to the MoFEPD for the Annual Summary Report including contributions to the Shire BEST towards the Payment for Ecosystem Services (PES);
- Supporting the MoFEPD with dissemination of information, organization (if applicable) of presentations of the results of evaluations and publication on relevant websites, such as those for MoFEPD; and
- Serve as a point of contact for inquiries regarding Compact projects and activities implemented.
-

6.1.2 EGENCO

For EGENCO, the Directorate of Planning and Development shall be responsible for coordinating Post-Compact M&E activities on behalf of the institution. In particular, the point of Contact in EGENCO will be the Senior Engineer responsible for System performance monitoring. The point of contact will be responsible for submission of Post-Compact related data to the designated representative. EGENCO will also collaborate with the M&E Division from MoFEPD, Independent Evaluators and MCC on key steps needed to enable a rigorous evaluation based upon the agreed evaluation design and approach. Post-compact responsibilities for EGENCO includes:

- Identifying a focal person to provide continuous assistance and advice to the MoFEPD on all aspects related to Post-Compact M&E of Compact Projects.
- Coordination of technical M&E aspects with entities responsible for providing primary data for indicators as detailed in this Post-Compact M&E Plan;
- Monitoring and maintaining the reporting system, to ensure that generation related data to be reported in the Post-Compact ITT are up-to-date;
- Ensuring completeness, accuracy, and integrity of data compiled from within EGENCO before submitting data for the quarterly and annual reports to MoFEPD;
- Submitting generation related data to the MoFEPD for the Annual Summary Report including contributions to the Shire BEST towards the Payment for Ecosystem Services (PES);
- Supporting the MoFEPD with dissemination of information, organization (if applicable) of presentations of the results of evaluations and publication on relevant websites, such as those for MoFEPD; and
- Serve as a point of contact for inquiries regarding Compact projects and activities implemented.

6.1.3 Ministry of Natural Resources, Energy and Mining (MNREM)

For MNREM, the Directorate of Policy and Planning will be the key source of all relevant data related to the activities. MNREM will also collaborate with the designated representative in implementation of evaluation activities. For instance, MNREM will work closely with the M&E Division of MoFEPD, Independent Evaluators and MCC on key steps needed to enable

a rigorous evaluation based upon the agreed evaluation design and approach. Post-compact responsibilities for MNREM includes:

- Identifying a focal person to provide continuous assistance and advice to the MoFEPD on all aspects related to Post-Compact M&E of Compact Projects.
- Coordination of technical M&E aspects with entities responsible for providing primary data for indicators as detailed in this Post-Compact M&E Plan;
- Ensuring completeness, accuracy, and integrity of data compiled from within MNREM before submitting data for the quarterly and annual reports to MoFEPD;
- Submitting power sector data to the MoFEPD for the Annual Summary Report including status of Single Buyer establishment and other power sector reforms, and the status of the annual generation procurement plan.
- Supporting the MoFEPD with dissemination of information, organization (if applicable) of presentations of the results of evaluations and publication on relevant websites, such as those for MoFEPD; and
- Serve as a point of contact for inquiries regarding Compact projects and activities implemented.

6.1.4 Malawi Energy Regulatory Authority (MERA)

The Directorate of Economic Regulation shall be responsible for the collection, compilation and reporting of key performance indicators to the designated representative. MERA will work closely with the M&E Division of MoFEPD, Independent Evaluators and MCC on key steps needed to enable a rigorous evaluation based upon the agreed evaluation design and approach. Post-compact responsibilities for MERA includes:

- Identifying a focal person to provide continuous assistance and advice to the MoFEPD on all aspects related to Post-Compact M&E of Compact Projects;
- Coordination of technical M&E aspects with entities responsible for providing primary data for indicators as detailed in this Post-Compact M&E Plan;
- Ensuring completeness, accuracy, and integrity of data compiled from within MERA before submitting data for the quarterly and annual reports to MoFEPD;
- Submitting power sector data to the MoFEPD for the Annual Summary Report including tariff levels and changes over the year with reference to approved 2018 base tariff application; and PPAs reviewed and approved (if any).
- Supporting the MoFEPD with dissemination of information, organization (if applicable) of presentations of the results of evaluations and publication on relevant websites, such as those for MoFEPD; and
- Serve as a point of contact for inquiries regarding Compact projects and activities implemented.

6.1.5 Shire BEST Trust

The Environmental Trust formed under the compact shall be responsible for reporting Post-Compact related ENRM statistics. Shire BEST will work closely with the M&E Division of MoFEPD, Independent Evaluators and MCC on key steps needed to enable a rigorous evaluation based upon the agreed evaluation design and approach. Post-compact responsibilities for Shire BEST includes:

- Identifying a focal person to provide continuous assistance and advice to the MoFEPD on all aspects related to Post-Compact M&E of Compact Projects.
- Coordination of technical M&E aspects with entities responsible for providing primary data for indicators as detailed in this Post-Compact M&E Plan;
- Ensuring completeness, accuracy, and integrity of data compiled from within Shire BEST before submitting data for the quarterly and annual reports to MoFEPD;
- Supporting the MoFEPD with dissemination of information, organization (if applicable) of presentations of the results of evaluations and publication on relevant websites, such as those for MoFEPD; and
- Serve as a point of contact for inquiries regarding Compact projects and activities implemented.

6.1.6 Compact Successor Entity: Malawi Millennium Development Trust

As stated in the MCA Malawi Program Closure Plan, an MCA Successor Entity will be set up called the Malawi Millennium Development (MMD) Trust to promote effective management of public funds, and ensure sustainability of compact-supported investments and reforms. The MMD plans to operate in the period of 2019-2020 and among its main objectives will be to support governmental institutions involved in Post Compact MCC-required M&E reporting. The MMD will also submit to the designated representative quarterly and annual activity reports that will be annexed to the Annual Summary Report submitted by the Monitoring and Evaluation Division of MoFEPD to MCC.

6.2 Review and Revision of the Post Compact M&E Plan

All revisions to the plan will be mutually agreed upon by the M&E Division of MoFEPD as the designated representative and MCC. Either party may suggest revisions to the plan. Within MCC, revisions to the Post Compact M&E Plan will be shared with Department of Compact Operations for information and approved by the M&E lead; however, the M&E lead may want to informally consult with sector leads before approving revisions.

6.3 M&E Budget

Independent evaluations are directly funded by the MCC. MCC will cover the costs for the independent evaluators (SI and Mathematica) and evaluation-related data collection while the GoM will be responsible for the collection of monitoring data and for the organization of workshops for these evaluations. The MoFEPD is expected to dedicate staff time to post-compact M&E activities. It will facilitate dissemination of interim and final evaluation findings, the presentations and other modalities (e.g., brochures) as well as any data quality review that the MoFEPD undertakes.

6.4 Other

6.4.1 Miscellaneous Post-Compact Obligations

As required by Section 3.7(d) of the Compact (which survives the expiration of the Compact pursuant to Section 5.4), the Government, through the designated representative (or otherwise), will continue to permit any authorized MCC representative, the Inspector General, the US Government Accountability Office, any auditor responsible for an audit contemplated by the Compact or conducted in furtherance of the Compact, and any agents or representatives engaged by MCC or the Government to conduct any assessment, review or evaluation of the

Compact Program, the opportunity to audit, review, evaluate or inspect activities funded by MCC Funding. Without limiting the foregoing, the Government, through the designated representative (or otherwise), further agrees to cooperate and coordinate with, and provide such documentation as may be requested from time to time, by MCC or any consultants or representatives working for MCC in connection with any of MCC's Post-Compact monitoring and evaluation activities in connection with the Malawi Compact Program.

6.4.2 Schedule of MCC M&E Missions

The MCC M&E Lead will undertake missions to Malawi to participate in dissemination activities of the independent evaluations. Therefore, the timing of MCC M&E missions will coincide with the scheduling of dissemination events by MoFEPD.

6.4.3 Dissemination of Evaluation Results

Social Impact is expected to commence the final round of data collection for PSRP and IDP in March 2019. Dissemination of evaluation results in-country and at MCC is expected to take place in 2020 following MCC guidelines for dissemination of results. For ENRM, Mathematica is expected to present interim results in 2019. Final data collection is expected to commence in May 2020. Dissemination of results in-country and at MCC is expected to take place in 2021. The Designated Representative will coordinate all the dissemination activities in country. MCC will be publishing final evaluations after the Compact. The Consultants will be expected to conduct evaluation presentations in-country as well as in Washington DC. A detailed schedule of post-compact data collection is illustrated in Table 4.

ANNEXES

Annex 1: Indicator Documentation Table

Results Statement	Common Indicator	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Additional Information
Objective-Level Outcome Indicators										
Improved electricity access and availability		Medium Term Outcome	Customers connected to the grid	Number of customers in Malawi connected to the ESCOM grid	Number	Customer Type	ESCOM Revenue Department	ESCOM	Quarterly	To measure growth in grid connections and household access to electricity. An individual customer is equivalent to a household or firm.
	P-25	Medium Term Outcome	Percentage of households connected to the national grid	Number of households that have access to a legal connection to electricity service from an electrical utility or service provider / Total number of households in the country	%	Urban/rural Male headed households/Female Headed Households	NSO's Integrated Household Survey/MNREM Reports	NSO	2020 2023	To measure trends in the percentage of the population with access to electricity provided through an electrical utility or other service provider.

Results Statement	Common Indicator	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Additional Information
Improved availability of hydroelectric power plants (HEP)		Outcome	Percent utilization of HEP	Actual energy generated by the plant (MWh) / Theoretical maximum energy of installed capacity at the plant (MWh)	%	Power Plant	EGENCO Generation Performance Monitoring Reports	EGENCO	Quarterly	Measures the capacity factor of generation plants. This factor should be as high as possible, and should demonstrate a balance between planned and fault maintenance. Can be used as a proxy to measure the effectiveness of ENRM interventions.
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 outside parties by financial close	US$ million	Private, Public	Signed Project Documents	Ministry for Natural Resources, Energy and Mining (MNREM)	Annual	Measure of private sector participation in the sector, both in generation and distribution. Targets will be based on Integrated Resource Plan

Results Statement	Common Indicator	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Additional Information
										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 committed by outside parties by financial close	MW	Private, Public	Signed Project Documents	Ministry for Natural Resources, Energy and Mining (MNREM)	Annual	Measure of private sector participation in the sector in generation. Targets will be based on Integrated Resource Plan completed in early 2017 and Malawi Electricity Investment Plan.
	P-15	Medium Term Outcome	Total electricity supply	Total electricity, in megawatt hours, produced or imported in a year	MWh	Power Plant	EGENCO Performance Monitoring Reports	EGENCO	Quarterly	A measure of growth in generation capacity

Results Statement	Common Indicator	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Additional Information
	P-17	Medium Term Outcome	Installed generation capacity	Total generation capacity, in megawatts, installed plants can generate within the country.	MW	On-grid/Off-grid	ESCOM Performance Monitoring Reports / MERA reports	ESCOM/MERA	Annual	To gauge progress on expansion of the overall power sector, which depends on a variety of factors that may be addressed by MCC investments in both power infrastructure and institutional reform, such as improvements in regulatory independence and effectiveness and the execution of a credible sector expansion plan.

Results Statement	Common Indicator	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Additional Information
	P-26	Medium Term Outcome	Share of renewable energy in the country	Total installed generation capacity of on- or off-grid renewable energy, in megawatts / Total installed generation capacity	%		ESCOM Performance Monitoring Reports / MERA reports	ESCOM/MERA	Annual	To track progress on- or off-grid sources of electricity generation derived from naturally replenished resources including such as wind, hydropower, solar energy, biomass, or biofuel
	P-23	Medium Term Outcome	Total electricity sold	The total megawatt hours of electricity sales to all customer types	MWh	Region, Customer type	ESCOM Power Trading Reports (National Control Center)	ESCOM	Annual	A measure of growth in energy consumed.
Infrastructure Development Project										

Results Statement	Common Indicator	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Additional Information
Reduced energy losses		Outcome	Total system losses (Technical and Non-Technical)	[(Total MWh sent from generation to transmission- Total MWh billed)/Total MWh sent from generation to transmission]	%		ESCOM System Operations Report	ESCOM	Quarterly	To measure total losses in the system, which constitute a loss of revenue and have a direct impact on financial performance, tariff calculations and required fiscal support to ESCOM. Baseline will be re-set after billing system upgrade. 2- 3% is a typically considered good for transmission.
	P-18	Outcome	Transmission System technical losses	1- [Total megawatt hours transmitted out from transmission substations / Total megawatt	%		ESCOM System Operations Report	ESCOM	Quarterly	To measure losses and performance specific to ESCOM's transmission business.

Results Statement	Common Indicator	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Additional Information
				hours received from generation to transmission substations]						
	P-19	Outcome	Distribution System losses (Technical & Non-Technical)	1 – [Total megawatt hours billed / Total megawatt hours received from transmission]	%		ESCOM System Operations Report	ESCOM	Quarterly	To measure performance within ESCOM's distribution business. The figure includes both technical and non-technical losses in distribution.
Reduced outages		Outcome	Average Frequency of forced outages/interruptions	Lost KVA / installed KVA	ratio		ESCOM Distribution Performance Monitoring Reports	ESCOM	Quarterly	To measure number of outages and frequency. Outage measurements at Tx substations and Gx underestimate the magnitude of outages at the customer level.

Results Statement	Common Indicator	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Additional Information
		Outcome	Average Duration of outages/interruptions	Total duration of faults per month / Number of faults per month	Hours		ESCOM Distribution Performance Monitoring Reports	ESCOM	Quarterly	To measure duration of outages. Outage measurements at Tx substations and Gx underestimate the magnitude of outages at the customer level.
		Outcome	Total system load shed	Total System Load Shed	MWh		ESCOM Distribution Performance Monitoring Reports	ESCOM	Quarterly	To measure extent and magnitude of Generation shortfalls leading to planned outages.
Improved Voltage Quality		Outcome	Voltage Quality at primary substations	Percentage of time within (±10% transmission and ±6% distribution) voltage range	%	Selected substations (Chintheche, Lilongwe B, Mlangeni/Golomoti)	ESCOM National Control Center – SCADA	ESCOM	Quarterly	To measure quality of supply improvements due to the projects. Substations to include Chintheche, Kanengo

Results Statement	Common Indicator	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Additional Information
										(Lilongwe B), and Mlangeni/Golomoti
Increased network control and improved data acquisition		Output	SCADA Coverage Transmission	Percent of transmission substations with SCADA	%		ESCOM SCADA Department	ESCOM	Quarterly	To measure operational efficiency of ESCOM Network
POWER SECTOR REFORM PROJECT										
Improved financial sustainability / solvency of ESCOM	P-24	Outcome	Operating cost-recovery ratio	Total revenue collected / Total operating cost. Total operating cost is defined as operating expenses plus depreciation	%	Operating expenses only, Operating expenses plus Depreciation plus Return	ESCOM Management Information System	ESCOM	Quarterly	Together with operating expenses covered with revenues, cost recovery ratio reflects utilities' ability to cover expenditures with revenues
		Outcome	Gearing Ratio	Total long-term debt + short-term debt + Bank Overdrafts/Total Equity	ratio		ESCOM Management Information System	ESCOM	Quarterly	Measure of the indebtedness of ESCOM, included to track similar

Results Statement	Common Indicator	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Additional Information
										indicators proposed
		Outcome	Current Ratio	Total Current Assets / Total Current Liabilities	ratio		ESCOM Management Information System	ESCOM	Quarterly	Measure of the liquidity or financial security of ESCOM.
ESCOM Turnaround Activity										
Improved financial management		Outcome	Average Collection Period in days (Annual)	365 Days * [(Beginning accounts receivables + ending accounts receivable) / 2) / Total sales]	Days		ESCOM Management Information System	ESCOM	Annual	Annual measure of the liquidity or financial security of ESCOM and of the efficiency of revenue collection, specifically the time lag between billing and receiving payment. Average collection period of 40 days represents a good revenue collection. The best performers

Results Statement	Common Indicator	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Additional Information
										in the region are Rwanda (10), South Africa (46), Lesotho (56) and Namibia (60).
		Outcome	Average Collection Period in days (Quarterly)	91.25 Days * [(Beginning accounts receivables + ending accounts receivable) / 2) / Total sales]	Days		ESCOM Management Information System	ESCOM	Annual	Quarterly measure of the liquidity or financial security of ESCOM and of the efficiency of revenue collection, specifically the time lag between billing and receiving payment. Average collection period of 40 days represents a good revenue collection. The best performers in the region are Rwanda (10),

Results Statement	Common Indicator	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Additional Information
										South Africa (46), Lesotho (56) and Namibia (60).
		Outcome	Average Creditor Days (Annual)	365 * [(Beginning accounts payables + ending accounts payables) / 2) /Total sales]	Days		ESCOM Management Information System	ESCOM	Annually	Annual measures how long it takes a company to pay its creditors and indicates company's creditworthiness from a suppliers' perspective. A company slow to pay bills – 100 days or more – and which is slow in collecting receivables may have trouble generating cash or obtaining supplies. Indicator should be evaluated next to average

Results Statement	Common Indicator	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Additional Information
										collection period.
Improved ESCOM operational management and efficiency		Outcome	Average Cost of Electricity Billed	[Total expenses for Gx, Tx and Dx (MK) / Total electricity billed (kWh)]*US$/kWh	US$		ESCOM Management Information System	ESCOM	Quarterly	Measures the cost of producing 1kWh of electricity, and GOM / ESCOM attempts to reduce total operating costs.
		Outcome	ESCOM Maintenance Expenditures ratio to planned maintenance budget	Actual maintenance expenditures / Planned maintenance budget as defined in Detailed Financial Plan	%		ESCOM Management Information System	ESCOM	Quarterly	Proxy measure of sustainability of operational investments in ESCOM.

Results Statement	Common Indicator	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Additional Information
	P-13	Output	Maintenance expenditure-asset value ratio	Actual maintenance expenditures / Total value of fixed assets	%		ESCOM Management Information System	ESCOM	Quarterly	Measure of sustainability of operational investments in ESCOM.
REGULATORY STRENGTHENING ACTIVITY										
Strengthened regulatory environment	P-14	Output	Cost-reflective tariff regime	Average Tariff per kilowatt-hour / Long-run marginal cost per kilowatt-hour of electricity supplied to customers.	%		ESCOM	ESCOM	Quarterly	
Improved market structure for Private Investment		Output	Implementation of new power market structure plan	Restructured power market implemented: - Licenses issued for Distribution, Transmission, System & Market Operator, and Single Buyer - Market Procedures	Date		MERA Reports	MNREM	Once	A measure of the creation of an enabling environment for power sector investment by private sector

Results Statement	Common Indicator	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Additional Information
				approved by MERA and operational						
		Output	Annual Generation Procurement Plan approved by MNREM	- Annual Generation Procurement Plan Approved by MNREM	Number		MERA Reports	MNREM	Annual	This should be done once per year.
Environment and Natural Resources Management Project										
Improved utilization of hydroelectric power plants (HEP)	P-16	Outcome	Power plant availability	Unweighted average across all power plants of the following: total number of hours per month that a plant is able and available to produce electricity / Total number of hours	%	Power Plant	EGENCO Performance Monitoring Reports	EGENCO	Quarterly	Indicative measure of improved availability of HEPs resulting from ENRM interventions. Plant availability is influenced by numerous other factors including routine

Results Statement	Common Indicator	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Additional Information
				in the same month.						maintenance schedules.
		Outcome	Electricity not generated due to weeds and sedimentation	Recorded output (MW) just before outage X Outage duration (h)	MWh	Power Plant	EGENCO Performance Monitoring Reports	EGENCO	Quarterly	To measure outages due to ENRM problems, and thus performance of WSM project
Reduced weed infestation and sedimentation in upper Shire River basin		Outcome	Water turbidity	Total suspended solids using standard methodology	MgL	Nkula and Liwonde	Southern and Blantyre Water Boards Monitoring Reports	Southern and Blantyre Water Boards	Quarterly	To measure effectiveness of ENRM activities in Upper Shire River
Weed and Sediment Management Activity										
Improved management of aquatic weeds		Outcome	Average weed management expenses per ton of weed harvested	Amount spent on weed management/Tons of weed harvested	USD		EGENCO Performance Monitoring Reports	EGENCO	Quarterly	To measure outages due to ENRM problems, and thus performance of WSM project

Results Statement	Common Indicator	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Additional Information
		Outcome	Amount of weed harvested at Liwonde barrage	Average weight in metric tons of weed harvested at Liwonde barrage per month	Metric Tons (million)		EGENCO Performance Monitoring Reports	EGENCO	Quarterly	To measure outages due to ENRM problems, and thus performance of WSM project
Improved control of sediment		Outcome	Sediment management expenses	Amount spent on sediment management/Tons of sediment removed	USD		EGENCO Performance Monitoring Reports	EGENCO	Quarterly	To measure outages due to ENRM problems, and thus performance of WSM project
		Output	Dredged material placement area constructed at Kapichira	The date by which the DMPA is ready for sediment inflow	Date		EGENCO		Once	
Environment and Natural Resources Management Activity										
Long-term, sustainable institutional arrangement established to support			Payment for Ecosystem Services established	An MOU is signed between ESCOM, EGENCO, and Shire Best establishing a Payment for	Date		Shire Best	Shire Best	Once	The PES is included in the levy at the lowest proposed levels

Results Statement	Common Indicator	Indicator Level	Indicator Name	Definition	Unit	Disaggregation	Primary Source	Responsible Party	Frequency of Reporting	Additional Information
improved land management and weed control in the upper and middle Shire River basins				Ecosystem Services						
		Output	Value of Payment for Ecosystem Services funds disbursed	Value disbursed of total PES funds in support of land management activities in the Shire River Basin	USD		Shire Best	Shire Best	Quarterly	To track progress on establishment Payment for Ecosystem Services

Annex 2: Indicator Baselines and Targets

Common Indicator	Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	End of Compact Target	Year 6 Target	Year 7 Target	Year 8 Target	Year 9 Target	Year 10 Target	Additional Information
					2013	2018	2019	2020	2021	2022	2023	
Objective-Level Outcome Indicators												
	Medium Term Outcome	Customers connected to the grid	Number	Level	235,469	255,684						
	Medium Term Outcome	Residential Customers connected to the grid	Number	Level	204,524	217,522						
	Medium Term Outcome	Commercial Customers connected to the grid	Number	Level	30,137	37,383						
	Medium Term Outcome	Industrial Customers connected to the grid	Number	Level	808	775						
P-25	Medium Term Outcome	Percentage of households connected to the national grid	%	Level	7.1							
	Medium Term Outcome	Percentage of households connected to the national grid-Urban	%	Level	33							This data collected during IHS3 conducted

Common Indicator	Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	End of Compact Target	Year 6 Target	Year 7 Target	Year 8 Target	Year 9 Target	Year 10 Target	Additional Information
					2013	2018	2019	2020	2021	2022	2023	
	Medium Term Outcome	Percentage of households connected to the national grid-Rural	%	Level	2.4							during the period March 2010 to March 2011
	Medium Term Outcome	Percentage of households connected to the national grid-Male-headed household	%	Level	7.8							
	Medium Term Outcome	Percentage of households connected to the national grid-Female-headed households	%	Level	5							
	Medium Term Outcome	Electric Power Consumption per capita	kWh/person	Level	95	127						
	Medium Term Outcome	Percent utilization of HEP	%	Level	78.00	90	90	90	90	90	90	
	Medium Term Outcome	Percent utilization of HEP - Nkula A	%	Level	85.00	95						Indicator similar to percent availability extracted from ERR model.

Common Indicator	Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	End of Compact Target	Year 6 Target	Year 7 Target	Year 8 Target	Year 9 Target	Year 10 Target	Additional Information
					2013	2018	2019	2020	2021	2022	2023	
	Medium Term Outcome	Percent utilization of HEP - Nkula B	%	Level	64.00	90						Indicator similar to percent availability extracted from ERR model.
	Medium Term Outcome	Percent utilization of HEP - Tedzani I & II	%	Level	96.00	95						Indicator similar to percent availability extracted from ERR model.
	Medium Term Outcome	Percent utilization of HEP - Tedzani III	%	Level	68.00	75						Indicator similar to percent availability extracted from ERR model.
	Medium Term Outcome	Percent utilization of HEP - Kapichira I	%	Level	75.00	85						Indicator similar to percent availability extracted from ERR model.
	Medium Term Outcome	Percent utilization of HEP - Kapichira II	%	Level		95						Indicator similar to percent availability extracted from ERR model.
	Medium Term Outcome	Investment in Power Sub-Sector - total USD Million	US$ million	Cumulative	435	952	248	500				Targets sourced from ESCOM investment plan

Common Indicator	Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	End of Compact Target	Year 6 Target	Year 7 Target	Year 8 Target	Year 9 Target	Year 10 Target	Additional Information
					2013	2018	2019	2020	2021	2022	2023	
		committed by financial close										and 2018 Tariff Application
	Medium Term Outcome	Investment in Power Sub-Sector - Private Sector commitments in $USD	US$ million	Cumulative	0							Targets to be sourced from Integrated Resource Plan developed for ESCOM
	Medium Term Outcome	Investment in Power Sub-Sector - Public Sector commitments in $USD	US$ million	Cumulative	435							Targets to be sourced from Integrated Resource Plan developed for ESCOM
	Medium Term Outcome	Investment in Power Sub-Sector - MW of investment in Generation	MW	Cumulative	64	40	94	73	240			Targets sourced from ESCOM investment plan and 2018 Tariff Application
	Medium Term Outcome	Investment in Power Sub-Sector - Private Sector MW investment	MW	Cumulative	0							Targets to be sourced from Integrated Resource Plan developed for ESCOM

Common Indicator	Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	End of Compact Target	Year 6 Target	Year 7 Target	Year 8 Target	Year 9 Target	Year 10 Target	Additional Information
					2013	2018	2019	2020	2021	2022	2023	
	Medium Term Outcome	Investment in Power Sub-Sector - Public Sector MW investment	MW	Cumulative	64							
P-15	Medium Term Outcome	Total electricity supply	MWh	Level (cumulative)	1,840,804	2,725,061						
	Medium Term Outcome	Total electricity supply - Nkula A	MWh	Level (cumulative)	178,692	224,694						
	Medium Term Outcome	Total electricity supply - Nkula B	MWh	Level (cumulative)	560,748	788,400						
	Medium Term Outcome	Total electricity supply - Tedzani I & II	MWh	Level (cumulative)	336,389	332,880						
	Medium Term Outcome	Total electricity supply - Tedzani III	MWh	Level (cumulative)	313,245	346,239						
	Medium Term Outcome	Total electricity supply - Kapichira I	MWh	Level (cumulative)	426,981	482,501						

Common Indicator	Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	End of Compact Target	Year 6 Target	Year 7 Target	Year 8 Target	Year 9 Target	Year 10 Target	Additional Information
					2013	2018	2019	2020	2021	2022	2023	
	Medium Term Outcome	Total electricity supply - Kapichira II	MWh	Level (cumulative)		532,608						
	Medium Term Outcome	Total electricity supply - Wovwe	MWh	Level (cumulative)	24,749	17,139						
P-17	Medium Term Outcome	Installed generation capacity (MW)	MW	Level	287							
P-17.1	Medium Term Outcome	Installed generation capacity-On Grid	MW	Level	287							
P-17.2	Medium Term Outcome	Installed generation capacity-Off Grid	MW	Level	0							
P-26	Medium Term Outcome	Share of renewable energy in the country	%	Level	100							
P-26.1	Medium Term Outcome	Total installed generation capacity of on- or off-grid renewable energy	MW	Level	287							

Common Indicator	Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	End of Compact Target	Year 6 Target	Year 7 Target	Year 8 Target	Year 9 Target	Year 10 Target	Additional Information
					2013	2018	2019	2020	2021	2022	2023	
P-26.2	Medium Term Outcome	Total installed generation capacity	MW	Level	287							
P-23	Intermediate Outcome	Total electricity sold	MWh	Level	1,406,549	2,186,861						
P-23.1	Intermediate Outcome	Total electricity sold - Residential Customers	MWh	Level	575,351	890,053						
	Intermediate Outcome	Total electricity sold - Residential Customers - Northern	MWh	Level	47804	73,952						
	Intermediate Outcome	Total electricity sold - Residential Customers - Central	MWh	Level	223960	346,461						
	Intermediate Outcome	Total electricity sold - Residential Customers - Southern	MWh	Level	303586	469,640						
P-23.2	Intermediate Outcome	Total electricity sold - Commercial	MWh	Level	214,691	393,635						

Common Indicator	Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	End of Compact Target	Year 6 Target	Year 7 Target	Year 8 Target	Year 9 Target	Year 10 Target	Additional Information
					2013	2018	2019	2020	2021	2022	2023	
	Intermediate Outcome	Total electricity sold - Commercial Customers - Northern	MWh	Level	23,883	43,790						
	Intermediate Outcome	Total electricity sold - Commercial Customers - Central	MWh	Level	86,968	159,456						
	Intermediate Outcome	Total electricity sold - Commercial Customers - Southern	MWh	Level	103,839	190,389						
P-23.2	Intermediate Outcome	Total electricity sold - Industrial Customers	MWh	Level	616,506	903,174						
	Intermediate Outcome	Total electricity sold - Industrial Customers - Northern	MWh	Level	29,748	43,580						
	Intermediate Outcome	Total electricity sold - Industrial Customers - Central	MWh	Level	149,059	218,369						
	Intermediate Outcome	Total electricity sold - Industrial Customers - Southern	MWh	Level	437,700	641,225						
Infrastructure Development Project												

Common Indicator	Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	End of Compact Target	Year 6 Target	Year 7 Target	Year 8 Target	Year 9 Target	Year 10 Target	Additional Information
					2013	2018	2019	2020	2021	2022	2023	
	Outcome	Total system losses (Technical and Non-Technical)	%	Level	22.0	19.8						
P-18	Outcome	Transmission System Technical losses	%	Level	10.5	8.8						Projections based on baseline value and consistent with ERR model
P-19	Outcome	Distribution System losses (Technical & Non-Technical)	%	Level	12	11.0						Projections based on baseline value and consistent with ERR model
	Outcome	Average frequency of forced outages/interruptions	Ratio	Level	1.7	.78						Agreed at Baseline and Targets workshop in Blantyre, Malawi held on August 29-30, 2013 with ESCOM
	Outcome	Average Duration of outages/interruptions	Hours	Level	3.65	2.15						Agreed at Baseline and Targets workshop in Blantyre, Malawi held on August

Common Indicator	Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	End of Compact Target	Year 6 Target	Year 7 Target	Year 8 Target	Year 9 Target	Year 10 Target	Additional Information
					2013	2018	2019	2020	2021	2022	2023	
												29-30, 2013 with ESCOM
	Outcome	Total System load shed	MWh	Level	18,847	25,465						Years 1-5 are consistent with the ERR model (2013 values no longer in model)
	Outcome	Voltage quality at primary substations - Northern Region - Chintheche 132kV	%	Level								Due to unreliability of existing data, this indicator will be reassessed once SCADA is online.
	Outcome	Voltage quality at primary substations - Central Region - Lilongwe B 66kV	%	Level		90						Due to unreliability of existing data, this indicator will be reassessed once SCADA is online.
	Outcome	Voltage quality at primary substations - Southern Region – Mlangeni/Golomoti 66kV	%	Level		90						Due to unreliability of existing data, this indicator will be reassessed once SCADA is online.

Common Indicator	Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	End of Compact Target	Year 6 Target	Year 7 Target	Year 8 Target	Year 9 Target	Year 10 Target	Additional Information
					2013	2018	2019	2020	2021	2022	2023	
	Output	SCADA Coverage Transmission	%	Level	46	68						
	Power Sector Reform Project											
P-24	Outcome	Operating cost-recovery ratio (based on operating expenses + Depreciation)	%	Level (cumulative)	150	128						Targets extracted from ESCOM Detailed Financial Model
	Outcome	Operating cost-recovery ratio (based on operating expenses)	%	Level (cumulative)	161	150						Targets extracted from ESCOM Detailed Financial Model
	Outcome	Operating cost-recovery ratio - based on operating expenses + depreciation + return (weighted average cost of capital (WACC) X rate base)	%	Level (cumulative)	113	100						Targets extracted from ESCOM Detailed Financial Model
	Outcome	Gearing Ratio	ratio	Level	0.25	.66						

Common Indicator	Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	End of Compact Target	Year 6 Target	Year 7 Target	Year 8 Target	Year 9 Target	Year 10 Target	Additional Information
					2013	2018	2019	2020	2021	2022	2023	
	Outcome	Current Ratio	ratio	Level	6.48	3.00						
ESCOM Turnaround Activity												
	Outcome	Average Collection Period in days (Annual)	Days	Level	72	60						
	Outcome	Average Collection Period in days (Quarterly)	Days	Level	72	60						
	Outcome	Average Creditor Days (Annual)	Days	Level	27	25						Targets based on ESCOM standards for average creditor days.
	Outcome	Average Cost of Electricity Billed	US$	Level-Average	0.07							
P-13	Output	Maintenance expenditure-asset value ratio	%	Level		2.5						
	Output	ESCOM Maintenance Expenditures ratio	%	Level	128	100						Agreed at Baseline and Targets workshop in

Common Indicator	Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	End of Compact Target	Year 6 Target	Year 7 Target	Year 8 Target	Year 9 Target	Year 10 Target	Additional Information
					2013	2018	2019	2020	2021	2022	2023	
		to planned maintenance budget										Blantyre, Malawi held on August 29-30, 2013 with ESCOM
Regulatory Strengthening Activity												
P-14	Output	Cost-reflective tariff regime	%	Level		100						Through 2022
P-14.1	Output	Average tariff per kilowatt-hour	USD	Level		.15						
P-14.2	Output	Long-run marginal cost per kilowatt-hour of electricity supplied to customers	USD	Level		.15						
	Output	Implementation of new power market structure plan	Date	Date			Sep 30 2019					
	Output	Annual Generation Procurement Plan approved by MNREM	Number	Level			1	1	1	1	1	
Environment and Natural Resources Management Project												

Common Indicator	Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	End of Compact Target	Year 6 Target	Year 7 Target	Year 8 Target	Year 9 Target	Year 10 Target	Additional Information
					2013	2018	2019	2020	2021	2022	2023	
	Medium Term Outcome	Power plant availability	%	Level	90	89						
	Medium Term Outcome	Power plant availability - Nkula A	%	Level	92	95						Years 1-5 are consistent with the ERR model (2013 values no longer in model)
	Medium Term Outcome	Power plant availability - Nkula B	%	Level	86	90						Years 1-5 are consistent with the ERR model (2013 values no longer in model)
	Medium Term Outcome	Power plant availability - Tedzani I & II	%	Level	98	75						Years 1-5 are consistent with the ERR model (2013 values no longer in model)
	Medium Term Outcome	Power plant availability - Tedzani III	%	Level	99	95						Years 1-5 are consistent with the ERR model (2013 values no longer in model)
	Medium Term Outcome	Power plant availability - Kapichira I	%	Level	97	85						Years 1-5 are consistent with the ERR model (2013 values no longer in model)

Common Indicator	Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	End of Compact Target	Year 6 Target	Year 7 Target	Year 8 Target	Year 9 Target	Year 10 Target	Additional Information
					2013	2018	2019	2020	2021	2022	2023	
	Medium Term Outcome	Power plant availability - Kapichira II	%	Level		95						Years 1-5 are consistent with the ERR model (2013 values no longer in model)
		Electricity not generated due to weeds and sedimentation	MWh	Level	4640	2,320						
	Outcome	Electricity not generated due to weeds and sedimentation - Nkula	MWh	Level	3129	1,564.5						
	Outcome	Electricity not generated due to weeds and sedimentationn - Tedzani	MWh	Level	562	281						
	Outcome	Electricity not generated due to weeds and sedimentation - Kapichira	MWh	Level	949	474.5						
	Outcome	Water turbidity - Liwonde	Mg/L	Level	96.6							

Common Indicator	Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	End of Compact Target	Year 6 Target	Year 7 Target	Year 8 Target	Year 9 Target	Year 10 Target	Additional Information
					2013	2018	2019	2020	2021	2022	2023	
	Outcome	Water turbidity - Nkula	Mg/L	Level	522.2							
Weed and Sediment Management Activity												
	Outcome	Average weed management expenses per ton of weed harvested	USD	Level	34							
	Outcome	Amount of weed harvested at Liwonde barrage	Metric Tonnes	Level	2,561							
	Outcome	Sediment management expenses	USD	Level	71,597							
	Output	Dredged material placement area constructed at Kapichira	Date	Date		31-May-18	25-March-19					Contract currently specifies March 25, 2019, yet there are continued delays
Environment and Natural Resource Management Activity												
	Output	Payment for Ecosystem Services Established	Date	Date	0	30-June-18	31-March-19					Tariff was approved very late in the Compact, including PES

Common Indicator	Indicator Level	Indicator Name	Unit	Indicator Classification	Baseline	End of Compact Target	Year 6 Target	Year 7 Target	Year 8 Target	Year 9 Target	Year 10 Target	Additional Information
					2013	2018	2019	2020	2021	2022	2023	
												amounts; MOUs are ready to be signed.
	Output	Value of Payment for Ecosystem Services funds disbursed	UDS	Cumulative	0	716,800	695,200	648,400	708,600			