



REVIEW OF THE MILLENNIUM CHALLENGE COMPACT ACCESS PROJECT IN GHANA

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EXECUTIVE SUMMARY

Introduction

The Access Project is one of six projects under the Ghana Power Compact (also known as Compact II) to boost Ghana's progress in poverty reduction and achieving economic growth through transformation of the power sector. The Compact II was signed between the Government of Ghana, USAID and Millennium Challenge Compact (MCC) on 5th August 2014, and came into force on 6th September 2016.

The \$10 million Access Project is aimed at improving Micro, Small and Medium Enterprises' (MSMEs) access to reliable electricity in selected Markets and Economic Enclaves (M&EEs) in peri-urban and urban areas in the Northern Electricity Distribution Company (NEDco)

and Electricity Company of Ghana (ECG) Target Regions. Through the reduction of barriers to obtaining legal connections and the solidification of partnerships among relevant institutions, the Access Project is anticipated to increase the number of new connections for MSMEs in targeted areas and provide public lighting in Markets and Economic Enclaves. The success of the Access Project will result in a positive impact on electricity delivery to selected areas. Additionally, it is expected that electricity tariff revenue collection will be improved, and incidences of electricity theft will be reduced. Importantly, economic productivity in selected enclaves and the regions as a whole will be improved, as more people will have access to electricity for productive purposes.

Review of the Access Project

The review of the Access Project mainly aims at:

1. Assessing the implementation progress of the Access Project.
2. Determining whether the Access Project's scope of work is properly designed to tackle specific electricity access challenges that exist in the markets and economic enclaves.
3. Making recommendations that can be adopted by the government and MIDA to ensure the long-term success of the project.

Methodology

The review of the Access Project was carried out by combining qualitative and quantitative data collection methods. Data was collected through a desktop research, and primary research through interviews and a market survey.

Findings

Objective 1: Assessing the implementation progress of the Access Project.

After evaluating the progress of implementation of the Access Project the following findings were made:

1.1 Access Project Preliminary Activities

Preliminary Activities of the Access Project that were completed included the following:

- a. A Rapid Field Appraisal of economic enclaves in the ECG and NEDco target regions. A total of 47 markets and 5 were visited and assessed based on an assessment criterion developed to determine which M&EEs would be included in the Consultant's Terms of Reference.
- b. Based on a selection schema, 25 M&EEs out of the 47, were selected to be included in the Terms of Reference for the

consultant who would carry out the Access Project Design.

c. A consultant, Messrs CH2M, was procured on 29th September 2016 to carry out the Access Project Design.

1.2 Access Project Design Activities

Access Project design activities were to be carried out in three phases

a. Phase I: Screening and selection of Target Markets and Economic Enclaves (M&EEs).

An Analysis of Variance (ANOVA) approach was used to select the markets for a survey in Phase II. A total of eleven (11) markets were selected from the results of the ANOVA study. The MiDA team decided to include all five (5) economic enclaves in the survey.

b. Phase II: Data Collection and Assessment of the Existing Situation in Target M&EEs and Analysis for Investment Decisions.

i. Data collection and assessment of the existing situation in eleven (11) and five (5) economic enclaves involved the following:

- Market Survey: Data collection on the electricity access gaps and use by MSMEs, and identification of barriers to electricity.
- Institutional Assessment: An assessment of both formal and informal institutions, policies, and laws that influence electricity service delivery.
- Infrastructure Audit: Taking inventory of physical electricity infrastructure and conducting a technical audit of the supply relative to the demand of electricity.

According to the report from MiDA, results of the market survey, institutional assessment, infrastructure audit and the condition assessment showed that investments of infrastructure should focus on the demolition and total replacement of existing distribution infrastructure.

The survey data suggested that a High Voltage Distribution System (HVDS) should be used as well as replacement of security lightening.

ii. The analysis for investment decisions included the following:

Three types of analyses were done on the markets; a cost-benefit analysis, an analysis of the total capital cost of introducing the HVDS service and a utility benefit analysis.

The cost of introducing the HVDS service showed that the total cost of HVDS investment, which is \$7,157,688, was below the 10-million-dollar budget limit for the access program for all 17 markets.

Based on the analysis carried out, 6 markets and 2 economic enclaves were selected as beneficiaries of the Access Project. In making the final decision, MiDA took into consideration geographic balance between Accra and Tamale

and gave Tamale Central Market and the Tamale and Timber economic enclaves priority. The 5-year compact duration was also taken into consideration, hence, fewer markets were selected to minimize the management requirements of the Access Project. The markets selected are to serve as a control group for monitoring and evaluation.

Table i shows the final list of markets that will benefit from the Access Project.

Table i: Final list of selected markets and economic enclaves ranked by benefit/cost ratio, with regional & market/EE balance.

Market/Economic Enclave	Market Size	Benefit/Cost	Utility Benefit	HVDS Cost (\$USD)
Madina Market	Large	1.37	\$244,514	\$542,925
Kaneshie Market	Large	1.26	\$406,226	\$965,700
Makola Market	Large	1.23	\$245,831	\$611,145
Dansoman Market	Medium	1.22	\$110,942	\$276,690
Agbogbloshie I	Large	1.22	\$240,488	\$598,800
Tamale Central Market	Medium	0.59	\$156,701	\$741,150
Accra Timber	Medium	0.49	\$119,525	\$708,587
Tamale Timber	Small	0.48	\$30,838	\$190,155
			TOTAL HVDS Cost	\$4,635,152

Source: MiDA,2017

Activities under Phase II were completed in the second quarter of 2017. In the third quarter of 2017, the final report was submitted, reviewed and all concerns raised during the review where corrected.

c. Phase III: Preliminary and Detailed Design of Project Activities (Mapping).

Phase III involves:

- i. Development of program level investments (project activities) at the targeted sites.
- ii. Development of the project logic, which illustrates how the outputs and outcomes of each activity and sub-activity (by type and location) map to a problem statement and root cause analysis.
- iii. Beneficiary analysis
- iv. Assessment of institutional capacity to undertake roles and responsibilities to be assigned during project implementation.
- v. Engineering designs are to be completed and bidding documents prepared.

Activities under Phase III commenced in the third quarter of 2017 and are currently ongoing. Phase III was initially to be completed before the end of the first quarter of 2018. However, negotiations to finalise the engineering design being handled by consultants has delayed the project.

1.3 Implementation of project activities

Implementation of key interventions is scheduled to begin in September 2018 according to MiDA. The Project team is to finalize detailed conceptual designs and prepare engineering designs. Subsequently, bidding documents will be prepared, and contractors will be invited to bid for projects prior to September 2018.

1.4 Challenges faced

MiDA has faced some challenges in the implementation of the Access Project.

1. Delays Threaten Timely Completion of The Access Project

The Preliminary and Detailed Design of Project Activities (Mapping), that is Phase III of the project, was delayed due to negotiations to finalise the engineering design being handled by consultants. Additionally, the data collection process delayed due to difficulty in engaging traders. MiDA is to complete all activities under the Compact II by 2021. These setbacks will make meeting the timeline challenging

2. Resettlement of Traders

Resettlement is a foreseeable challenge in circumstances where displacement of traders may become necessary. The feasibility study anticipates that though some amount of involuntary resettlement is anticipated, the severity of the resettlement impact that could develop as a result of activities from the Compact II is very low.

3. Land Litigation

According to the Accra Metropolitan Assembly, land litigation will be a major challenge during the implementation of the project. Currently, private developers are contesting for portions of the markets in Accra that may be used by the Access Project.

1.5 Key observations from implementation progress of the Compact II Access Project:

The following observations have been made after assessing the progress of implementing the Access Project:

1. Contribution of the Access Project to the National Electrification Scheme.

The Access Project is different from other electricity access projects in Ghana that actively extend electricity provision to unelectrified communities.

Though the Access project does not appear to expand electricity access in the traditional manner, the access project scope of work is in line with the focus of the future phases of the National Electrification Scheme (NES). The NES Master Plan Review (2011-2020) advises that substantial capital investments must be made for the provision of technologies and equipment within the sub-transmission and distribution systems. Also, according to the NES Master Plan Review, these investments must be done based on the analysis of system requirements to minimize the incidence of voltage drops and losses and to improve quality and reliability the of electricity service (Arthur Energy Advisors and Ministry of Energy, 2010).

2. Detailed Preliminary Analysis

The process of conducting a market survey and additional financial analysis to

determine the M&EEs that are to benefit from this project is highly commendable. The process followed ensures fairness as the selection of M&EEs was carried out, in accordance with the Compact II agreement, based on a survey and the outcomes of investment analysis by an independent consultant. This, therefore, minimized the interference of political motivations or sentiments in the selection of M&EEs. It also ensures that the most important needs are met in the targeted M&EEs.

3. Wide Stakeholder Consultations

MiDA's consultations with Metropolitan, Municipal and District Assemblies (MMDAs), Market Associations and traders in the M&EEs will ensure that all concerns captured are well represented in the project design

4. Financial Constraints Not Anticipated

The total cost of investment for the installation of HVDS in the 8 selected M&EE's which is \$4,635,152, is below the 10-million-dollar budget limit for the access program. Hence no financial challenges are anticipated in the implementation of the project. However, in the event that the project is further delayed during the implementation phase, cost overruns may occur due to inflation and other factors that may erode the anticipated savings.

Objective 2: Determining whether or not the Access Project's scope of work is properly designed to tackle specific electricity access challenges that exist in the markets and economic enclaves

To achieve this objective, ACEP devoted time to seeking the views of beneficiaries in the selected markets and enclaves. From the 8 markets selected in Accra and Tamale,

62 individuals were interviewed.

Data gathered from respondents paint a picture of markets that have good access to electricity, and reliability of electricity supply is fairly good. However, infrastructure remains a challenge. Maintenance appears to be very ad-hoc and only carried out when there is an urgent need. The poor maintenance culture in markets gives reason to the electricity challenges (see section 6.1.5) faced by traders in the market. Below are Electricity Challenges Existing in the Selected Markets:

1. Low capacity transformers that don't meet the needs of the market.
2. Old and poor wiring
3. Lack of prepaid meters for some traders
4. High electricity tariff that is associated with not having prepaid meters and inefficient infrastructure that increases electricity consumption.

5. Unreliable power supply
6. Old and bad wiring
7. Lack of street lights
8. Dysfunctional meters and faulty prepaid meters that have problems with recharging
9. Power surges

Most importantly, findings show that the Access Project is well targeted at solving existing electricity infrastructure problems in the selected markets and economic enclaves.

Objective 3: Making recommendations that can be adopted by the government and MiDA to ensure the long-term success of the project.

ACEP desires the success of the Access Project and offers MiDA the following recommendations:

1. **Timely Completion of The Project**
The managers of the Access Project must endeavour to put in place mechanisms to ensure that time overruns are avoided to ensure that the project is completed on time.
2. **Fair, Prompt and Adequate Compensation For Displaced Traders.**

MiDA must ensure that people displaced by the project are compensated fairly, promptly and adequately in accordance with the Article 20(2) of the 1992 Constitution. Strong partnership must be developed with the Land Valuation Division to carry out assessment of compensation to be paid to victims after land acquisition by the Government in accordance with section 22 of the Lands Commission Act (Act 767). Considering the prevalence of people operating on lands they have no legal or customary right to, it is important to carry out effective dialogue to ensure that these individuals who have no right to

compensation do not disrupt the resettlement processes. MiDA must also be aware of the risk of moral hazard on the part of traders who may, in anticipation of compensation, quickly erect structures in order to benefit unfairly during the compensation assessment process.

3. Effective Public Education

Effective public education must also be carried out on the details of the Access Project, its benefits, implementation plan and other relevant issues to ensure maximum support from all community members and not only leaders of the markets. Also, beneficiaries must be enlightened on the need to use electricity available to develop and enhance economic activities, which will ultimately translate into growth of the national economy. MiDA should collaborate with the National Commission for Civil Education (NCCE) to develop a strategic public education plan to aid in the achievement of the objectives of

the Access Project.

4. Continuous Stakeholder Engagement

Success of the Access Project will require continuous engagement with ECG, NEDCo, Market Leaders and respective Metropolitan, MMDAs (Accra Municipal Assembly and Tamale Municipal Assembly) and other relevant stakeholders such as the NCCE and the Land Valuation Division to ensure that all key interventions are efficiently and effectively implemented in a timely manner. Market authorities and MMDA's should also liaise with contractors during the implementation phase to prevent unrest in the areas and further delays of the project.

5. Relegation of the Access Project to the Background.

The ECG PSP Transaction under the ECG Financial and Operational Turnaround (EFOT) Project appears to have taken centre stage in the implementation of projects

under the Ghana Power Compact. Care must be taken by MiDA to ensure that other projects, particularly the Access Project, are not relegated to the background as this will impact on ability to implement the project in a timely manner.

6. Award Of Contract To Competent Companies In Addition To Strict Monitoring And Evaluation.

MiDA should ensure that companies awarded contracts for the implementation of the access project have long standing records of high technological competence and ability to carry out projects of this nature in a cost efficient and timely manner. Also, it is important that monitoring and supervision of implementation is carried out regularly to avoid time and cost overruns and ensure value for money.

7. Sustainability of the Access Project

Sustainability of the Access Project is crucial. This is dependent on long term partnerships between all relevant stakeholders, outreach

and awareness building. It is important that upon completion of the Access project, monitoring and evaluation as well as impact assessments are done to ensure that the project delivers its primary objective of improving safe, cost effective, and legal electricity service among enterprises in the targeted regions. Also, the results of the survey and condition assessments carried out during the selection M&EEs should be utilized in addition to information from monitoring and evaluation and impact assessments to enable replication of the access project in other parts of the country. This will ensure that the entire country benefits from the project.

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ACRONYMS AND ABBREVIATIONS

ACEP	Africa Centre for Energy Policy
ECG	Electricity Company of Ghana
EIF	Entered into Force
GoG	Government of Ghana
HVDS	High Voltage Distribution System
IEA	International Energy Agency
LNG	Liquefied Natural Gas
MCC	Millennium Challenge Compact
MiDA	Millennium Development Agency
MSME	Micro, Small and Medium Enterprises
NES	National Electrification Scheme
NEDCo	Northern Electricity Distribution Company
OSIWA	Open Society Initiative for West Africa
SE4ALL	Sustainable Energy For All
USD	United States Dollar
USA	United States of America
USAID	United States Agency for International Development
TM&EE	Targeted Markets and Economic Enclaves

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PART 1 Introduction

1.0 Background: Electricity Access in Ghana

According to the International Energy Agency (IEA), energy access refers to the provision of modern energy services to people around the world. Energy services are defined as access to electricity and clean cooking facilities by households and businesses, also including fuels and stoves that do not cause air pollution in houses. It also refers to access to modern energy that enables productive economic activity, for example mechanical power for agriculture, textile and other industries (IEA, 2014). According to the Sustainable Energy For All (SE4ALL) 2012 Action Plan, access to electricity is a function of availability and affordability.

If the household is within the range of economic connection and supply of the electricity grid, then electricity is considered to be available. Similarly, when the household is able to pay the up-front connection cost (or first cost) and electricity usage costs (tariff), electricity is considered to be affordable. Access to modern energies is vital to improving the standards of living and boosting economic development, as reliable high-quality energy aids the provision of services.

In 1989, the then Ministry of Energy instituted the National Electrification Scheme (NES) as the Government's principal policy to extend electricity to all parts of the country over a 30-year period from

1990 to 2020. Government set a target in line with the National Electrification Scheme to increase the access rate to 80% by the year 2015.

In 2008, 66.7% national coverage representing 4,070 electrified communities with a total population of 16 million had been achieved. In 2012, 643 communities were connected to the national grid, bringing the total number of communities connected nationally to about 5,500 (Energy Commission of Ghana, 2015). By 2015, the highest access rate of 97% was recorded in the Greater Accra Region and lowest of 44% in the Upper East Region (Table 2)

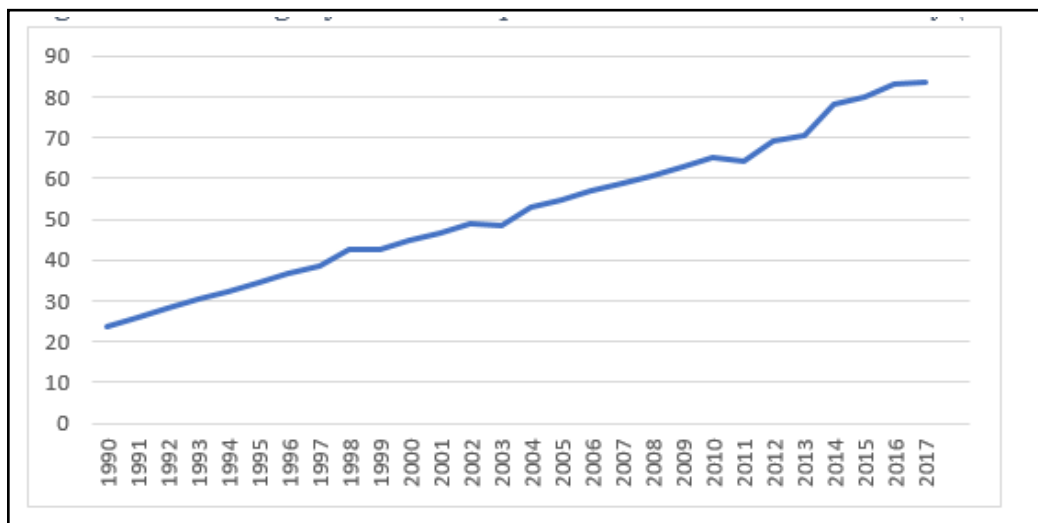
Table 1: Electrification Access Rate (2015) by Region

REGION	TOTAL POPULATION	UNELECTRIFIED POPULATION	ELECTRIFIED POPULATION	ACCESS RATE
GREATER ACCRA	4,010,054.00	120,302.00	3,889,752.00	97
CENTRAL	2,201,863.00	418,354.00	1,783,509.00	81
EASTERN	2,633,154.00	789,947.00	1,843,207.00	70
WESTERN	2,376,021.00	760,327.00	1,615,694.00	68
ASHANTI	4,780,380.00	1,588,469.00	3,191,911.00	66.77
VOLTA	2,118,252.00	741,389.00	1,376,863.00	65
BRONG AHAFO	2,310,983.00	762,625.00	1,548,358.00	67
NORTHERN	2,479,461.00	1,239,731.00	1,239,730.00	50
UPPER WEST	702,110.00	421,266.00	280,844.00	40
UPPER EAST	1,046,545.00	586,066.00	460,479.00	44

Source: Energy Commission Data Access Toolkit

In 2017, the national electricity access rate increased from 83.24 percent in 2016 to 83.62 percent. This is significant improvement from the 23.8% coverage in 1990 (see Figure 1).

Figure 1: Percentage of Ghana's Population with Access to Electricity (1990 – 2017)



Source: World Bank, Sustainable Energy for All (SE4ALL) database and 2018 Budget Statement.

Although electricity access has increased positively in Ghana, regions with more densely populated urban areas such as the Greater Accra, Eastern, Central, Western and Ashanti Regions have higher access rates compared to the Northern, Upper East and

and Upper West which have the lowest access rates. Low access rates in the three northern regions can be explained by the low density of potential consumers, poverty, significant distances needed for medium voltage lines and the high cost related

to medium and low voltage, transformers and service drops (Adabanya, 2014). The cost of extending electricity access to these areas exceeds the benefits of doing, so due to low demand.

1.1 Electricity Access Challenges in Ghana

Through the implementation of various policies geared at promoting energy access, Ghana has advanced significantly in providing energy to Ghanaian consumers. However, the energy sector continues to face great challenges in the quest to achieve 100% access to electricity in all parts of the country. High electricity tariffs dissuade many rural communities from connecting their homes to the grid in areas where grid access is available. There are also many more rural areas that are not connected to the grid due to the isolated nature of these communities, making it economically unfeasible to do so.

In areas where grid connection is available, supply is sometimes unreliable resulting in the dependence on self-generation methods such as gasoline or diesel back-up generators.

Further, there are insufficient funds to provide extend electricity access and provide essential infrastructure to ensure efficient and reliable supply of electricity. The Electricity Company of Ghana (ECG) and Northern Electricity Distribution Company (NEDCo), Ghana's major distributors of electricity, have over the years been unable to collect revenues from defaulting electricity consumers, including several state institutions, hospitals and schools. Theft of electricity infrastructure and electricity theft from illegal connections has also contributed to loss of revenue to the utilities. The challenge of insufficient revenue has prevented the companies from running self-funded electricity access programs.

Also, the lack of essential infrastructure has resulted in an overload of lines and transformers, wear and tear of equipment, unreliable electricity supply, technical and commercial losses and fire outbreaks in extreme cases.

The government of Ghana recognized that improving electricity distribution through the provision of adequate electricity distribution infrastructure will boost economic activities in the country. In particular, medium and small-scale enterprises who depend largely on electricity for production and service delivery will be well equipped to boost production, expand operations and employ more people thereby reducing poverty and contributing to economic growth. The Access Project under the Millennium Challenge Compact (MCC) II was therefore designed to directly address the deficit in electricity distribution infrastructure.

1.2 The Millennium Challenge Corporation Ghana Power Compact II

In February 2012, Ghana was named one of four countries to participate in the pilot for the Partnership for Growth; an initiative intended to create the next generation of emerging markets through better coordinated and strategically focused United States Government programs and resources. Based on an analysis of the obstacles to economic growth, conducted jointly by a team of economist from the Government of Ghana GoG, United States Agency for International Development (USAID) and Millennium Challenge Corporation (MCC), three key constraints to Ghana's economic growth were identified: insufficient and unreliable power, lack of access to credit, and insecure land use rights. The GoG selected the power sector as an area of focus for its proposed second compact.

Under the terms of the MCC, the GoG was to be granted four hundred and sixty-nine million three hundred thousand United States Dollars (US\$469,300,000) as total program funding, which will be disbursed in two tranches: two hundred seventy-nine million three hundred thousand United States Dollars (US\$279,300,000) as Tranche I Funding, and One Hundred and Ninety Million United States Dollars (US\$190,000,000) as Tranche II Funding. On Tuesday September 6, 2016, the Government of Ghana met all requirements and the Compact entered into force.

Furtherance to its responsibility to oversee and manage the implementation of the Program, the GoG designated the Millennium Development Authority (MiDA), the agency that was set up to implement the first Compact, as the accountability entity to implement the Program as agent of the government.

The Government of Ghana signed the Millennium Challenge Compact II also known as the Ghana Power Compact, with the Millennium Challenge Corporation (MCC) on August 5, 2014, in the backdrop of the US Africa Leaders' Summit in Washington. The four hundred and sixty-nine million three hundred thousand United States Dollars (US\$469,300,000) compact is aimed at boosting Ghana's progress in poverty reduction and achieving economic growth through transformation of the power sector. On Tuesday September 6, 2016, the Government of Ghana met all requirements and the Compact entered into force.

The Ghana Power Compact is designed to directly support strategic objectives of the energy sector to achieve sufficient power supply to sustain emerging oil and gas-based industries as well including exports to neighbouring countries.

The Ghana Power Compact consists of six projects designed to address constraints to economic growth by aiming to improve the reliability and quality of power in Ghana. These are:

- ECG financial and operational turnaround project
- NEDCO financial and operational turnaround project
- Regulatory strengthening and capacity building project
- Access project
- Power generation sector improvement project
- Energy efficiency and demand side management project

1.3 Objective

The review of the Access Project mainly aims at:

- a. Assessing the implementation progress of the Access Project.

- b. Determining whether or not the Access Project's scope of work is properly designed to tackle specific electricity access challenges that exist in the markets and economic enclaves.

- c. Making recommendations that can be adopted by the government and MIDA to ensure the long term success of the project.

1.4 Methodology

The review of the Access Project was carried out by combining of qualitative and quantitative data collection methods. To determine the implementation progress of the project and assess the relevance of its scope of work, data was collected through a desktop research, and primary research through interviews and a market survey.

1.4.1 Desktop Research

The desktop research was used to gather secondary data on the MCC Compact II, the state of electricity access and challenges

faces by the distribution companies in ensuring access to electricity. Reports were obtained from the Millennium Development Agency, Energy Commission as well as articles published online.

1.4.2 Interviews

Preliminary interviews were carried out with the Project Manager of the Access project at the Millennium Development Agency (MiDA) to understand the scope of work of the access project, the progress of implementation as well as implementation successes and challenges. The Accra Municipal Assembly Market Superintendent, Northern Electricity Distribution Company Director of Engineering were also interviewed to understand the role these institutions have played in the implementation process and the successes and challenges encountered from their point of view.

1.4.3 Survey

In order to confirm if the scope of work of the Access project was a direct solution to electricity distribution challenges in markets and economic enclaves, a survey was conducted in the eight markets selected to benefit from the access project. The survey collected data using a questionnaire.

Questionnaire Development

A Semi-Structured questionnaire was developed using both close ended and open-ended questions. Close ended questions were used to collect data such as the type of electricity meters used, the incidence of fire outbreaks and illegal connections that could be easily analysed. Open ended questions were used to allow the respondents to express their views regarding electricity infrastructure and distribution challenges faced in the market and their opinion on the Access Project.

Sampling

The survey was conducted in two regions: Greater Accra Region and the Northern Region. Specifically, the survey was administered in the eight selected markets and economic enclaves that are to benefit from the Access Project. Six of the markets are located in Accra and the remaining two in Tamale.

A combination of purposive sampling and random sampling were used to select respondents. Market administrators, managers and market queens were deliberately selected as they represent the traders in the markets. Random sampling was used to select traders in the markets. A total of 62 people responded to questionnaires from the eight markets. Appendix 1 provides a detailed list of respondents.

Data Analysis

To analyse the data, qualitative and quantitative methods were used.

Microsoft Excel was used to analyse the quantitative data through description and conceptualization.

Challenges

Some traders in the Accra Timber Market refused to speak to the team collecting the data. They were of the opinion that the team had been to the market at an earlier date to collect similar information on electricity issues, yet no solutions had been implemented.

1.5 Organization of the Paper

This paper is divided into three major Parts. Part 1 covers the introduction of the paper. Part 2 covers chapters 2 to 4 which is the review of the Access Project under MCC Power Compact II. Chapter 2 delves into the background of the MCC Power Compact II Electricity Access Project.

Chapter 3 tackles the implementation progress of the Access Project including stakeholder management and challenges faced. Chapter 4 presents the Access Project beneficiaries point of view which is the analysis of ACEP's market survey.

Part 3 covers chapter 5 which presents the key observations from implementation progress of the Compact II Access Project and recommendations and conclusion of the review.

2.0 Background of the Access Project

The Access Project was developed in continuance of the government's policy objective to increase access to modern forms of energy. The \$10 million Access Project is aimed at improving the access of Micro, Small and Medium Enterprises (MSMEs) to reliable electricity in selected markets and economic enclaves in semi-urban and urban areas in the NEDCo and ECG Target Regions.

NEDCo Target Regions refer to Sunyani, Tamale, Techiman NEDCo operational areas, other NEDCo operational areas determined based on recommendations and NEDCo operational areas mutually agreed between the Government and MCC. (Millenium

Challenge Corporation, 2012, pp. Annex V-5) ECG Target Regions refer to "(a) the Accra East and Accra West ECG service areas, (b) areas which are in close proximity to Accra, whose source of supply is from Accra and whose load contribute to losses in the Accra network, (c) other regions as may be determined based on recommendations from the feasibility study funded under the 609(g) Agreement, or (d) other regions mutually agreed between the Government and MCC." (Millenium Challenge Corporation, 2012, pp. Annex V-2)

2.1 Activities of the Access Project

2.1.1 Improved Electricity Supply to MSMEs and Social Institutions Activity under the Access Project

According to Compact II agreement, this project involves carrying out power audits in the Targeted Markets and Economic Enclaves (TM&EE) and nearby social institutions to provide accurate information on the status of existing electricity infrastructure, wiring standards, and potential fire hazards, and recommend upgrades and corrective interventions to ensure reliability in electricity supply and safety. Based on the recommendations of the power audit, the interventions below will be carried out together with the Energy Efficiency and Demand Side Management Project component of the Compact II programme:

- a. Infrastructure upgrades and corrective actions in targeted markets and enclaves.
- b. Provision of metered public lighting in targeted markets and economic enclaves and targeted social institutions to extend business operating hours, prevent theft and increase public safety, in particular for women.
- c. Electrification of targeted social institutions that currently lack service (Millenium Challenge Corporation, 2012).

2.1.2 Improving Service Delivery and Strengthening Partnerships Activity under the Access Project.

According to Compact II agreement, this activity is aimed at developing and implementing technical and institutional approaches aimed at broadening participation in the productive use of electricity that can be applied in the service areas of ECG and NEDCo.

The interventions under this activity are as follows:

a. Studies will be conducted to have a better understanding of the various challenges experienced in accessing legal and reliable electricity by MSMEs in Targeted Markets and Economic Enclaves. The studies will scrutinize:

- i. Standards and requirements for connection
- ii. ECG and NEDCO's institutional challenges in serving markets and economic enclaves
- iii. Customer perceptions of connection processes
- iv. Cost of connection
- v. Any other relevant barriers identified

Solutions to address the numerous barriers MSMEs face in acquiring legal and safe access to electricity will be designed and implemented based on the outcome of these studies.

Solutions will be implemented in a scaled and organized manner to allow robust assessments of impact where practicable.

b. Studies will be conducted on the challenges faced in using electricity for productive purposes by MSMEs in Targeted Markets and Economic Enclaves. The study will also assess current programs and services that are available to address those challenges.

Information outreach campaigns and other possible interventions recommended by the study, will be implemented.

c. To identify the challenges in the relationships between utilities and end users of electricity, an assessment of relevant institutions will be conducted. These institutions include market women associations, trade associations, MDAs, ECG and NEDCo. Based on the assessment, interventions to improve coordination and partnerships will be recommended. This will improve outreach to and create awareness

among the stakeholders (Millenium Challenge Corporation, 2012).

2.2 Benefits of the Access Project

The following are the expected benefits of the Access Project according to MiDA:

a. Improved security

The Access Project is expected to reduce the rate of theft and criminal activities in selected market places and economic enclaves. Ghana Power Compact, through the Access Project, will provide security lighting. This will ensure a safe and conducive environment for business activities.

b. Improved economic activities and reduction in incidence of fire outbreak

The Access Project will improve voltage within the selected markets through the implementation of infrastructural projects.

These upgrades will reduce the incidences of fire outbreaks resulting from overloaded networks and illegal connections. It will enhance the efficient use of machinery and other electrical equipment thereby boosting economic activity.

c. Reduced commercial losses associated with electricity distribution

The replacement of old and installation of new meters will resolve the issue of illegal connections and power theft which cause great commercial losses to the electricity distribution company. This will also ensure that power consumers pay accurate costs for electricity consumed and increase supply of electricity to new customers in these selected market areas.

d. Improved stakeholder cooperation in the energy sector

The project also aims at enhancing cooperation among the key stakeholders through effective engagement

of stakeholders such as the Market Associations, MMDA's and ECG/NEDCo.

It is important to note that though M&EEs are the focus of the Access Project, social institutions such as schools and health facilities within the area of the M&EEs will benefit indirectly from new connections facilitated by the access project (Millenium Challenge Corporation, 2012).

3.0 **Implementation Progress of the Access Project**

This section provides a detailed analysis of the progress made in the implementation of the Access Project. It tackles the preparatory activities, market and economic enclave screening and selection processes, data collection, market survey and the investment analysis.

3.1 Preparatory Activities

To set the access project in motion in the third quarter of 2015, the MCC offered to use funds from the MCC Grant and Implementation Agreement, dated as of August 7, 2013 to procure consultants to complete preparatory work. The Consultant was to be procured in the fourth quarter of 2015. The following consultants were to be appointed:

- o Survey Consultant
- o Technical Audit Consultant
- o Institutional Strengthening Consultant

In the fourth quarter of 2015, the terms of reference for the consultant was designed. A Rapid Field Appraisal of Markets and Economic Enclaves (MEEs) was carried out. Within the defined area of the compact, 47 markets and 5 economic enclaves in Tamale in the Northern Region and Accra East and Accra West in the Greater Accra Region,

which are the ECG and NEDco target regions, were visited and assessed based on an assessment criterion developed to determine which M&EEs would be included in the Consultant’s Terms of Reference.

To begin the selection process for the markets a selection schema was prepared and presented. These markets also represent the markets where ECG and NEDCo experience the greatest challenges in electricity delivery and revenue generation. To select the initial 25 markets, an evaluation of the markets/economic enclaves for purposes of investment was done using a weighted average method. In the evaluation eight characteristics were used (See Table 2 for the Selection criteria).

Table 2: Selection criteria and weight of the initial 25 markets

Characteristic	Weight
Market size (by number of vendors).	10%
Type of structures in the markets	10%
Proximity to electric supply (3 without).	10%
Degree to which electric supply impacts market activities	20%
Market operating schedule.	10%
Land tenure	10%
Vendor size	15%
MMDA development plans	10%

Source: MiDA, 2017.

Following the evaluation exercise, 25 M&EEs were selected and forwarded to MCC for inclusion in the Terms of Reference for the Consultant. In addition, MiDA undertook visits to stakeholders in the ECG Accra Regions and Tamale Metropolitan Area (MiDA, 2015).

In the second quarter of 2016, the project was taken through a re-scoping and re-designing phase. MiDA provided assistance to MCC on a pre-proposal meeting with the Army Corp of Engineers, the Consultants carrying out the redesign of the Project (MiDA, 2016).

On 29th September 2016, MCC signed the contract with Messrs CH2M to undertake the Access Project Design.

3.2 Project Design Activities

CH2M commenced work immediately and submitted both draft and final Inception Reports as well as a Final Screening Report for the Markets and Economic Enclaves by

December 2016 (MiDA, 2016).

The Project Definition and Conceptual Design were to be completed in three phases. By December 2017, as part of the Consultant's deliverables in undertaking the Access Project Definition and Design, the first two phases were completed. The first phase involved screening and selection of target markets and economic enclaves for the study. Data collection and assessment of the existing situation in target M&EEs was done at the second phase, and the third phase, soon to be completed, involves the preliminary and detailed engineering design of project activities (mapping) (MiDA, 2017). Once the Access Project Definition and Design is completed the award of contract for project implementation will be carried out. In the following sub-sections, details of specific activities in each of the three phases are discussed.

3.2.1 Phase I: Screening and Selection of Target Markets and Economic Enclaves for the Study

The screening study provided a good starting point for the site selection process. This process was followed by an in-depth statistical analysis of the market and economic enclave characteristics in order to select a smaller group demonstrative of the entire population, to be included in a detailed survey. This was completed in the first quarter of 2017

A. The Selection Process

An initial condition assessment of all twenty-five (25) markets and five (5) economic enclaves was carried out to evaluate the status of the medium and low voltage distribution systems. The information gathered from the assessment would be used in the future to assess renovation and expansion costs of the electric distribution and security lighting systems of the markets not included in

the final selection for the Access Project markets in case future works are to be carried out in those unselected markets.

An analysis of variance (ANOVA) was done to identify the exact markets that will be used in the survey and not as a basis for investment. “The analysis of variance approach focused on evaluating the number of vendors divided by sheds, stalls and stores, as well as the number of vendors with access to electric service and the number of large loads identified at each market.” (MiDA, 2017, p. 2). Prior to the ANOVA assessment, some markets were removed because of scheduled planned reconstruction. Other markets in close proximity were also joined into one. Nineteen (19) markets and five economic enclaves were therefore evaluated. Figure 2 provides the list of Markets and Economic Enclaves included in the ANOVA study

Figure 2: Markets and Economic Enclaves included in the ANOVA study.

Markets	Economic Enclaves
Adabraka market	Chorker Smokers
Nima	Abossey Okai
Maamobi	Accra timber
Nii Boiman	Teshie Light industrial
Achimota	Tamale timber
Dome	
Taifa	
Madina	
Osu	
Nungua	
Dansoman	
Kaneshie	
Agbogbloshie	
Makola	
Agbogbloshie II	
Pedestrian Mall	
Tamale Central	
Aboabo/Shea Nut	
Lamashegu	

Source: MiDA, 2017

A group of eleven (11) markets were then selected based on the results of the ANOVA study. The MiDA/MCC team decided to include all 5 economic enclaves into the survey.

Figure 3: 11 Markets Selected Based on the ANOVA Study

Markets	Economic Enclaves
Agboglobshie I Madina Kaneshie Agboglobshie II Nungua Dansoman Makola Pedestrian Mall Dome Tamale Central Aboabo/Shea Nut	Chorker Smokers Abossey Okai Accra timber Teshie Light industrial Tamale timber

Source: MiDA, 2017

3.2.2 Phase II: Market Survey Data Collection and Assessment of the Existing Situation in Target M&EEs.

Under the Phase II, the following surveys were carried out in the 11 markets and 5 economic enclaves selected vis the ANOVA study:

Market Survey: Collection of data and information on the electricity access gaps and use by MSMEs, and identification of barriers to electricity in markets and economic enclaves in Accra and Tamale.

b) Institutional Assessment: An assessment of both formal and informal institutions, policies, and laws that influence electricity service delivery in markets and economic enclaves.

c) Infrastructure Audit: Taking inventory of physical electricity infrastructure and conducting a technical audit of the supply relative to the demand of electricity in markets and economic enclaves.

After this analysis, three (3) markets out of the eleven (11) selected for the survey were dropped. Dome was dropped because it was undergoing rehabilitation. Nungua was outside the area of consideration for the project, and Aboabo/Shea Nut Market was

under renovation. Additionally, three economic enclaves - Chorkor Smokers market, Abossey Okai, and Teshie Light Industrial economic enclave - were discarded for modest energy consumption, uncooperative market authorities and being under a ten- year management contract respectively.

According to the report from MiDA, results of the market survey, institutional assessment, infrastructure audit and the condition assessment showed that investments of infrastructure should focus on the demolition and total replacement of existing distribution infrastructure. The survey data suggested that a High Voltage Distribution System (HVDS) should be used as well as replacement of security lightening.

B. Analysis for Investment Decisions

The analysis for investment decisions was carried out on the eleven (11) markets and five (5) economic enclaves. However, to have a better understanding of the nature of investments needed in markets, the consultant included six (6) markets to the analysis for investment decisions bringing the number of markets analysed in this section to Seventeen (17).

Three types of analyses were done on the markets; a cost-benefit analysis, an analysis of the total capital cost of introducing the HVDS service and a utility benefit analysis.

The cost benefit analysis is the ratio of the total economic benefits to be derived from the entire access project, to and the cost of implementing the project.

The cost of introducing the HVDS service showed that the total cost of HVDS investment, which is \$7,157,688, was below the 10-million-dollar budget limit for the access program for all 17 markets.

The utility benefit analysis is an analysis of the marginal revenues that ECG and NEDCo would realize if commercial losses were reduced and new customers added, assuming that commercial losses will be reduced by ten percentage points from 24.5% ¹ to 14.5%. This reduction according to MiDA (2017) will be possible, "... through replacement of low voltage circuits and all meters and service drops; as well as by the marginal sales to market/economic enclave vendors taking the average reported expenditures for ECG/NEDCo customers as reported in the market survey" (page 3).

¹ 24.5% losses were estimated from the 2014 ECG turn-around project analysis performed by CH2MHill on behalf of MCC and MiDA as a component of the Ghana MCC Compact II due diligence process.

According to the MiDA report, the values of utility benefit were reported as ‘annual additional gross revenue’ derived from energy sales and uncorrected by operating expenses. Table 2 below shows the results of the analyses carried out on the 17 markets and economic enclaves.

Table 3: List of Markets showing results of cost/benefit analysis, utility benefit and total cost.

Market/Economic Enclave	Benefit/Cost	Economic Benefits	HVDS Cost (\$USD)	Utility Benefit
Madina Market	1.37	\$744,402	\$542,925	\$244,514
Kaneshie Market	1.26	\$1,213,645	\$965,700	\$406,226
Makola Market	1.23	\$751,668	\$611,145	\$245,831
Dansoman Market	1.22	\$337,588	\$276,690	\$110,942
Agbogbloshie I	1.22	\$727,919	\$598,800	\$240,488
Tamale Central Market	0.59	\$435,939	\$741,150	\$156,701
Accra Timber	0.49	\$346,734	\$708,587	\$119,525
Tamale Timber	0.48	\$91,342	\$190,155	\$30,838
Maamobi Market *	1.2	\$35,286	\$29,393	\$58,679
Nii Boiman Market*	1.07	\$179,626	\$167,250	\$58,679
Achimota Market*	1.03	\$98,928	\$96,143	\$32,541
Adabraka Market *	0.9	\$99,299	\$110,040	\$32,265
Nima Market *	0.81	\$329,849	\$405,495	\$113,187
Lamashegu Market *	0.72	\$65,257	\$90,750	\$21,779
Pedestrians Mall	0.65	\$640,590	\$989,430	\$227,381
Agbogbloshie II	0.62	\$322,246	\$520,650	\$114,537
Taifa Market	0.36	\$40,970	\$113,385	\$14,844

Source: MiDA, 2017

In the table below, markets have been ranked from highest cost-benefit analysis to the least. MiDA placed emphasis on achieving a geographic balance in the project between the north and south by deciding to make investments in both Accra and Tamale markets. Hence, priority was given to the Tamale Central Market and the Tamale and Accra Timber economic enclaves. Most importantly, since MiDA will be faced with the major challenge of completing the access project within the 5-year compact duration due to the slow pace of implementation, MiDA decided to minimize the complexity and management oversight of the projects. Hence, a final selection of eight, that is, 6 markets and 2 economic enclaves, out of the eleven markets and economic enclaves was done instead of the initial plan of selecting 10 markets to benefit from the project. This selection was done to minimize the management requirements of the Market Access Project, and the markets are to serve as a control group for monitoring and evaluation. Table 3 shows the final list of markets that will benefit from the Access Project.

Table 4: Final list of selected markets and economic enclaves ranked by benefit/cost ratio, with regional & market/EE balance.

Market/Economic Enclave	Market Size	Benefit/Cost	Utility Benefit	HVDS Cost (\$USD)
Madina Market	Large	1.37	\$244,514	\$542,925
Kaneshie Market	Large	1.26	\$406,226	\$965,700
Makola Market	Large	1.23	\$245,831	\$611,145
Dansoman Market	Medium	1.22	\$110,942	\$276,690
Agbogbloshie I	Large	1.22	\$240,488	\$598,800
Tamale Central Market	Medium	0.59	\$156,701	\$741,150
Accra Timber	Medium	0.49	\$119,525	\$708,587
Tamale Timber	Small	0.48	\$30,838	\$190,155
TOTAL HVDS Cost				\$4,635,152

Source: MiDA, 2017

Activities under Phase II were completed in the second quarter of 2017. In the third quarter of 2017, the final report was submitted, reviewed and all concerns raised during the review were corrected.

3.2.3 Phase III: Preliminary and Detailed Design of Project Activities (Mapping).

Activities under Phase III commenced in the third quarter of 2017. This involves the development of program level investments (project activities) at the targeted sites. The deliverable also includes the development of the project logic, which illustrates how the outputs and outcomes of each activity and sub-activity (by type and location) map to a problem statement and root cause analysis. Other outputs are a beneficiary analysis and the assessment of institutional capacity to undertake roles and responsibilities to be assigned during project implementation. Most importantly, the engineering designs are to be completed and bidding documents

prepared.

According to the Project Manager of the Access Project, activities under Phase III was initially to be completed before the end of the first quarter of 2018. However, the timeline was shifted to the end of first half of 2018 to accommodate the delay. The deadline was still not met due to negotiations to finalise the engineering design being handled by consultants based in the MCC head office in the US.

As at the end of August 2018, the Consultant was in the process of developing two (2) Terms of References for MiDA to engage other Consultants to undertake the following:

- i) Customer Outreach, Facilitation Assistance for New Connections and Normalization of Services;
- ii) Institutional Assessment and Engagement for Sustainability

Additionally, the Consultant was also preparing Engineering Designs for High Voltage Distribution System(HVDS) and Security Lighting in the Markets.

Table 5: Summary of Project Design Activities and timelines

Date	Progress made Design of the Access Project
2015 Q3	Scope of the project and the specific project sites not defined.
2015 Q4	<p>MCC offered to use funds from the MCC Grant and Implementation Agreement, dated as of August 7, 2013 to procure consultants to complete preparatory work. Consultant will be procured in the next quarter.</p> <p>The following consultants would be appointed:</p> <ul style="list-style-type: none"> o Survey Consultant o Technical Audit Consultant o Institutional Strengthening Consultant <p>Rapid Field Appraisal of Markets and Economic Enclaves (MEEs): Twenty-five (25) M&EEs selected following the evaluation exercise and forwarded to MCC for inclusion in the final ToR for the consultant</p>
2016 Q1	MiDA reviewed the Rapid Field Appraisal document and sent comments back to MCC.
2016 Q2	Re-scoping and re-design phase of the project by MCC: MiDA provided assistance to MCC on a pre-proposal meeting with the Army Corp of Engineers, the Consultants carrying out the redesign of the Project. ToR document finalized in this quarter.
2016 Q3	MCC completed the procurement of a consultant and signed a contract with Messrs CH2M to undertake the Access Project Design on 29th September, 2016.

2016 Q4	CH2M commenced works and submitted both draft and final Inception Reports including a Final Screening Report for the Markets and Economic Enclaves
2017 Q1	CH2M completed the Phase I of the assignment which included the Screening and Selection of Markets and Economic Enclaves
2017 Q2	CH2M completed the Phase II of the assignment which included the On-Site field Survey, the Infrastructural Audit and Institutional Assessment. The consultant was yet to submit the final report.
2017 Q3	The consultant submitted the final report for the Onsite field survey, the Infrastructural Audit and Institutional Assessment which received some comments; the comments were resolved. The Consultant commenced the Phase III of the assignment

Source: MiDA, 2015, 2016, 2017

3.3 Award of Contract and Implementation of Project.

The awarding of contracts and actual implementation of the project will be carried out after Phase III is complete. Contract awards for the construction and/or rehabilitation of LV lines in the markets was expected to start at the end of 2018, however, due to the delay in completing

phase III, the start date was revised to October 2019. Contractors will be given a period of one year to implement the project activities finalized in Phase II in the selected M&EEs, barring any unforeseen impediments.

3.4 Stakeholder Management

After the completion of the stakeholder analysis and mapping, several meetings were held with the local and regional market leadership to assist in raising awareness of the entire Compact and the Access Project most importantly. Additionally, meetings were held with district assemblies and the Accra and Tamale metropolitan assemblies. MiDA has also been working closely with ECG and NEDCO who have been supportive in the providing key information for the survey.

Aside from the lack of cooperation from the market authorities of the Abossey Okai economic enclave, all markets involved in the condition assessment and survey were willing to cooperate with MiDA. Market authorities were willing to support any program directed at improving the state of electricity distribution in the market since

this has a direct impact on the ability to do business.

3.5 Challenges

MiDA has faced some challenges in the implementation of the Access Project.

1. Delays threaten timely completion of the Access Project

The greatest challenge is related to meeting the deadline for the project completion. MiDA is to complete the Access project by 2021. However, time taken to design the project after Compact II entered into force, delayed its implementation. To avoid a situation where the project cannot be completed, MiDA decided to reduce the number of target markets and economic enclaves from 10 to 8. This was done to minimize the complexity and management oversight of the projects and make meeting the deadline feasible.

However, this deprives two markets and/or economic enclaves from enjoying the benefit of the Access Project.

Researchers encountered difficulties in engaging traders during the data collection process. Data collection required traders to temporarily halt sales to respond to questions. Many were unwilling to do so. Those willing to respond to questionnaires were also distracted and had challenges with understanding questions asked. This challenged deprived the researchers of obtaining data from some traders. It also resulted in elongating the time needed to carry out interviews as well as the possibility of inaccuracies in the responses given by the traders.

The Preliminary and Detailed Design of Project Activities (Mapping), that is Phase III

of the project, was also delayed due to negotiations to finalise the engineering design being handled by consultants.

2. Resettlement of traders

According to the Project Manager in charge of the Access Project, resettlement still remains a foreseeable challenge in circumstances where displacement of traders may become necessary. Also, securing land needed to accomplish the task ahead in areas where available land may be inadequate may be a challenge.

The feasibility study anticipates that though some amount of involuntary resettlement² is anticipated, the severity of the resettlement impact that could develop as a result of activities from the Compact II is very low.

² “Involuntary resettlement” refers both to physical displacement (relocation of shelter or business) and economic displacement (loss of assets or access to assets that leads to loss of income sources or other means of livelihood as a result of sub-activity-related land acquisition and/or restrictions on land use).

3. Land Litigation

According to the Accra Metropolitan Assembly, land litigation will be a major challenge during the implementation of the project. Currently, private developers are contesting for portions of the markets in Accra that may be used by the Access Project.

4.0 Beneficiaries' Point of View About the Access Project.

In order to fully appreciate the need for the Access Project, ACEP devoted time to seeking the views of beneficiaries in the selected markets and enclaves. To do this, 62 individuals from the 8 markets selected in Accra and Tamale were interviewed. Interviewees included traders, facility managers, market queens, butchers, cold store owners, fashion designers and others (See Appendix 1 for details of respondents).

The subsections below summarize responses obtained.

4.1 Feedback from Respondents that Reflect Relevance of the Access Project.

4.1.1 Access to Electricity and Reliability of Electricity Supply

Out of the 62 respondents, only 3% did not have access to electricity in their market. Respondents without electricity access were in Agbogbloshie Market and Madina Market. Regarding reliability of electricity, 68% of respondents said power disruptions were manageable. This is because blackouts, though still occur, do not disrupt or pose a great challenge to businesses of traders. Also, 13% and 19% thought electricity supply was unreliable and reliable respectively.

4.1.2 Types of Meters

Out of 62 total respondents, 57 respondents owned electricity meters. A total of 42 respondents used prepaid meters while 15 respondents used post-paid meters. It is important to note that all respondents in the Tamale Central and Timber Markets used post-paid meters. Users of post-paid meters were also found in the Kaneshie and Makola Markets.

4.1.3 Fire Outbreaks and Causes

Responses to the incidence of fire outbreaks were mixed. Some markets recorded both positive and negative responses to the incidence of fire outbreaks. However, according to the responses, all markets except Kaneshie and Agbogloboshie, had experienced fire outbreaks. Fire outbreaks were attributed primarily to poor wiring, power fluctuations, the use of candles, and other unknown causes.

4.1.4 State of Electricity Infrastructure and Maintenance

Respondents' assessment of electricity infrastructure showed that 50% of people believed that electricity infrastructure in their markets were bad. The other 50% believed it was either 'satisfactory but not good' or 'good'. In relation to the frequency of maintenance, 58% of respondents said that maintenance was carried out only when there was a major issue. Also, 18% disclosed that maintenance had never occurred, while 10% said maintenance was done quarterly or yearly.

4.1.5 Electricity Challenges Existing in the Selected Markets

10. low capacity transformers that don't meet the needs of the market.
11. Old and poor wiring
12. Lack of prepaid meters for some traders

13. High electricity tariff that is associated with not having prepaid meters and inefficient infrastructure that increases electricity consumption.
14. Unreliable power supply
15. Old and bad wiring
16. Lack of street lights
17. Dysfunctional meters and faulty prepaid meters that have problems with recharging
18. Power surges

Most importantly, findings show that the Access Project is well targeted at solving existing electricity infrastructure problems in the selected markets and economic enclaves.

4.2 Findings

Data gathered from respondents paint a picture of markets that have good access to electricity, and reliability of electricity supply is fairly good. However, infrastructure remains a challenge. Maintenance appears to be very adhoc and only carried out when there is an urgent need. The poor maintenance culture in markets gives reason to the electricity challenges (see section 6.1.5) faced by traders in the market.

5.0 Key Observations, Recommendations and Conclusions

This section highlights the key issues discovered in the implementation of the access project and provides recommendations to improve implementation.

5.1 Key Observations from the Implementation of the Compact II Access Project.

The following observations have been made after assessing the progress of implementing the Access Project:

1. Contribution of the Access Project to the National Electrification Scheme.

The Access Project is different from other electricity access projects in Ghana, such as the National Electrification Scheme and Self-Help Electrification Program, that actively extend electricity provision to unelectrified communities. Rather, the project focuses on investing in modern technology to improve reliability in electricity supply and safety, solving the challenges experienced in legally accessing electricity and encouraging the use of electricity for productive purposes in electrified markets and economic enclaves. The project is considered a pilot project to be replicated in other markets and economic enclaves across the country.

The project, however, does not benefit unelectrified rural areas.

Though the project does not appear to expand electricity access in the traditional manner, the access project scope of work is in line with the focus of the future phases of the National Electrification Scheme (NES). The NES Master Plan Review (2011-2020) advises that substantial capital investments must be made for the provision of technologies and equipment within the sub-transmission and distribution systems. Also, according to the NES Master Plan Review, these investments must be done based on the analysis of system requirements to minimize the incidence of voltage drops and losses and to improve reliability and the quality of electricity service (Arthur Energy Advisors and Ministry of Energy, 2010).

2. Time Management.

The Ghana Power Compact entered into force in 2016 and is scheduled to be

completed by 2021. MiDA made relatively good progress by completing phases I and II; that is, selecting the targeted M&EEs, and data collection and assessment of the existing situation in Target M&EEs by December 2017. MiDA, however, acknowledged the challenge of implementing the project within the five-year timeframe. To mitigate this challenge, MiDA reduced the targeted M&EEs supposed to benefit from the project from ten to eight, depriving two from enjoying the benefits of the project. Given the delays being experienced in finalizing Phase III of the project, the risk of not completing the project in time is increased as one cannot ignore the possibilities of project delays

3. Preliminary Analysis

The process of conducting a market survey and additional financial analysis to determine the M&EEs that are to benefit from this project is highly commendable.

The process followed ensures fairness as the selection of M&EEs was carried out, in accordance with the Compact II agreement, based on a survey and the outcomes of investment analysis by an independent consultant. This, therefore, minimized the interference of political motivations or sentiments in the selection of M&EEs. It also ensures that the most important needs are met in the targeted M&EEs.

4. Stakeholder Consultations

MIDA's involvement of key stakeholders in the process of implementing the Access Project is commendable. Consultations with Metropolitan, Municipal and District Assemblies (MMDAs), Market Associations and traders in the M&EEs will ensure that all concerns captured and well represented in the project design. Also, it will ensure that rights of traders and other occupants of the targeted M&EEs are not infringed upon. The engagement of stakeholders also served as an opportunity to provide education on the

project.

5. Financial Constraints Not Anticipated

The analysis for investment decisions revealed that the total cost of investment for the installation of HVDS in the 8 selected M&EE's which is \$4,635,152, was below the 10-million-dollar budget limit for the access program. Hence no financial challenges are anticipated in the implementation of the project. However, in the event that the project is further delayed during the implementation phase, cost overruns may occur due to inflation and other factors that may erode the anticipated savings.

6. Project is Targeted at Existing Challenges.

Data collection from the markets show that the challenges that are targeted by the access project to be solved are challenges that actually disrupt the supply of electricity to the traders.

5.2 Recommendations

ACEP desires the success of the Access Project and offers MiDA the following recommendations:

1. Timely Completion of the Project

The managers of the Access Project must endeavour to put in place mechanisms to ensure that time overruns are avoided to ensure that the project is completed on time.

2. Fair, Prompt and Adequate Compensation for Displaced Traders.

MiDA must ensure that people displaced by the project are compensated fairly, promptly and adequately in accordance with the Article 20(2) of the 1992 Constitution. Strong partnership must be developed with the Land Valuation Division to carry out assessment of compensation to be paid to victims after land acquisition by the Government in accordance with section 22 of the Lands Commission Act (Act 767).

Considering the prevalence of people operating on lands they have no legal or customary right to, it is important to carry out effective dialogue to ensure that these individuals who have no right to compensation do not disrupt the resettlement processes. MiDA must also be aware of the risk of moral hazard on the part of traders who may, in anticipation of compensation, quickly erect structures in order to benefit unfairly during the compensation assessment process.

3. Effective Public Education

Effective public education must also be carried out on the details of the Access Project, its benefits, implementation plan and other relevant issues to ensure maximum support from all community members and not only leaders of the markets. Also, beneficiaries must be enlightened on the need to use electricity available to develop and enhance economic activities,

which will ultimately translate into growth of the national economy. This must be carried out via all available media outlets; radio, television and social media platforms. Additionally, a conscious effort must be made to communicate in local languages to obtain full engagement of the populace. To carry this out effectively, MiDA should collaborate with the National Commission for Civil Education (NCCE) to develop a strategic public education plan to aid in the achievement of the objectives of the Access Project.

4. Continuous Stakeholder Engagement

Success of the Access Project will require continuous engagement with ECG, NEDCo, Market Leaders and respective Metropolitan, MMDAs (Accra Municipal Assembly and Tamale Municipal Assembly) and other relevant stakeholders such as the NCCE and the Land Valuation Division to

ensure that all key interventions are efficiently and effectively implemented in a timely manner. Market authorities and MMDA's should also liaise with contractors in the event where relocation is necessary during the implementation phase to prevent unrest in the areas and further delays of the project.

5. Relegation of the Access Project to the Background.

The ECG PSP Transaction under the ECG Financial and Operational Turnaround (EFOT) Project appears to have taken centre stage in the implementation of projects under the Ghana Power Compact. Care must be taken by MiDA to ensure that other projects, particularly the Access Project, are not relegated to the background as this will impact on ability to implement the project in a timely manner.

6. Award of Contract To Competent Companies In Addition To Strict Monitoring And Evaluation.

MiDA should ensure that companies awarded contracts for the implementation of the access project have long standing records of high technological competence and ability to carry out projects of this nature in a cost efficient and timely manner. Also, it is important that monitoring and supervision of implementation is carried out regularly to avoid time and cost overruns and ensure value for money.

7. Sustainability of the Access Project
Sustainability of the Access Project is crucial. This is dependent on long term partnerships between all relevant stakeholders, outreach and awareness building. It is important that upon completion of the Access project, monitoring and evaluation as well as impact assessments are done to ensure that the project delivers its primary objective of improving safe, cost effective, and legal electricity service among enterprises in the targeted regions.

Also, the results of the survey and condition assessments carried out during the selection M&EEs should be utilized in addition to information from monitoring and evaluation and impact assessments to enable replication of the access project in other parts of the country. This will ensure that the entire country benefits from the project.

5.3 Conclusion

The review of the Access Project aimed at assessing the implementation progress of the 10 million-dollar Ghana Electricity Access Project, highlights implementation successes and challenges and offers recommendations to identified challenges.

After carrying out preliminary activities in 2015, the Consultant, CH2M, tasked to develop the Access project definition and conceptual design was contracted in September 2016.

The Consultant completed Phase I of the assignment which included the Screening and Selection of Markets and Economic Enclaves. Phase II of the assignment which included the On-Site Field Survey, the Infrastructural Audit and Institutional Assessment has also been completed. Phase I and II were completed by the second quarter of 2017. Phase III activities which includes the preliminary and detailed design of project activities (mapping) commenced in the last quarter of 2017 and is currently facing delays in completion.

Implementing the project within the five-year timeframe (2016- 2021) is a challenge MiDA. To mitigate this challenge, MiDA reduced the targeted M&EEs to be selected from ten to eight, depriving two from enjoying the benefits of the project. Researchers also faced challenges in engaging traders during the data collection period.

An additional foreseeable challenge is in relation to the resettlement of traders and land acquisition if the need arises. Hiring of contractors to implement the project is scheduled for September 2018. This is, however, dependent on the timely completion of the preliminary and detailed design of project activities (mapping).

Going forward, MiDA must strategically collaborate with all relevant institutions such as the MMDA's, market authorities, ECG, NCCE and Lands Valuation Division to carry out public education and awareness, relocations and installations of the HVDS across all targeted M&EEs ensure smooth implementation and attainment of maximum benefits of the access project. Also, results of the survey and condition assessments carried out during the selection M&EEs should be utilized in addition to information from monitoring and evaluation and impact assessments to enable

replication of the access project in other parts of the country. This will ensure that the entire country benefits from the project.

Appendices

1. Final list of selected markets in Accra and Tamale.

Market/Economic Enclave	Market Size	Benefit/Cost	Utility Benefit	HVDS Cost (\$USD)
Madina Market	Large	1.37	\$244,514	\$542,925
Kaneshie Market	Large	1.26	\$406,226	\$965,700
Makola Market	Large	1.23	\$245,831	\$611,145
Dansoman Market	Medium	1.22	\$110,942	\$276,690
Agboghloshie I	Large	1.22	\$240,488	\$598,800
Tamale Central Market	Medium	0.59	\$156,701	\$741,150
Accra Timber	Medium	0.49	\$119,525	\$708,587
Tamale Timber	Small	0.48	\$30,838	\$190,155
			<i>TOTAL HVDS Cost</i>	<i>\$4,635,152</i>

2. Details of Respondents from the 8 selected markets in Accra and Tamale

Market	Institution	Business Area	Designation/Position	Number	Gender
Dansoman	Traders Union	Commodities	Queen Mother	1	Female
		Fashion Designer	Owner	1	Male
		Fashion Designer	Owner	1	Male
		Fashion Designer	Owner	1	Male
		Health Care	Owner	1	Female
		Cold Store	Owner	1	Male
		Business Center	Staff	1	Female
	Market Management Authority	Facility Management	Secretary	1	Male
		Cold Store	Owner	1	Female
	SDA Credit Union	Financial Services	Manager	1	Female
	SDA Credit Union	Financial Services	Staff/Cashier	1	Female
TOTAL				11	6 Females 5 Males
Kaneshie		Grinding Mill	Owner	1	Male
		Grinding Mill	Owner	1	Male
		Cold Store	Owner	1	Female
	National Investment Bank	Financial Services	Manager	1	Female
	Accra Markets Ltd	Market Administration	Managing Director	1	Male
	Eclipse Microfinance Ltd	Financial Services	Customer Service	1	Female
		Fashion Designer	Owner	1	Male
TOTAL				7	4 Males 3 Females

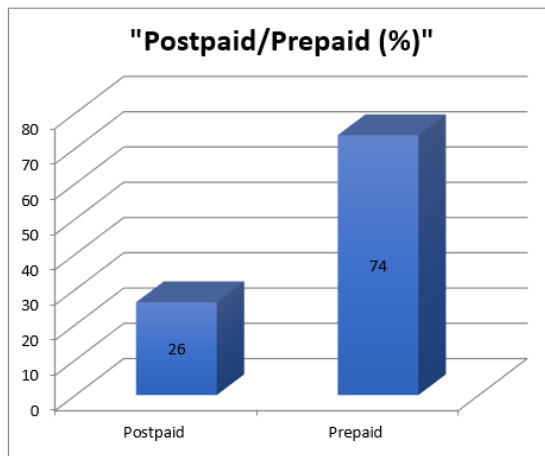
Market	Institution	Business Area	Designation/Position	Number	Gender
Madina	Union	Commodities	Owner/Association Secretary	1	Female
		Cold Store	Owner	1	Male
		Cosmetics	Owner	1	Female
		Corn Mill	Owner	1	Male
		Fan Ice Store	Owner	1	Female
		Corn Mill	Owner	1	Male
		Cold Store	Owner	1	Female
TOTAL				7	4 Females 3 Males
Accra Timber Market	Sawmill	Wood mill	Owner	1	Male
			Assistant Manager	1	Male
			Owner	1	Male
			Owner	1	Male
			Deputy Manager	1	Male
			Owner	1	Male
			Owner	1	Female
			Machine Operator	1	Male
			Owner	1	Male
			Assistant Manager	1	Male
TOTAL				10	9 Males 1 Females

Market	Institution	Business Area	Designation/Position	Number	Gender
Agbogbloshie I		Welding	Staff	1	Male
	Equity Focus MBank	Micro Finance	Staff	1	Female
		Beauty Salon	Owner	1	Female
	Queen Mother Rep	Cold Store	Manager	1	Female
		Cold Store	Owner/Manger	1	Male
TOTAL				5	3 Females 2 Males
Makola	Traders Union	Textile materials	Executives	7	Female
		Bulk water seller	Owner	1	Female
		Fashion Designer	Owner	1	Female
	Makola Shopping Mall (Phase II)	Property Management	Head (General Services)	1	Male
		Meat Storage/Seller	Owner	1	Male
		Fashion Designer	Owner	1	Female
TOTAL				12	10 Feales 2 Males
Tamale Central Market		Bulk Soft Drink Seller	Sales Persons	1	Male
		Textile Materials	Owner	1	Female
		Fashion Designer	Owner	1	Female
		Fashion Designer	Owner	1	Male
		Super Market	Owner	1	Male
TOTAL				5	3 Males 2 Females

Market	Institution	Business Area	Designation/Position	Number	Gender
Tamale Timber Market		Sawmill	Operator	1	Male
		Super Market	Owner	1	Female
	Tamale Timber market Chairman	Sawmill	Owner	1	Male
		Sawmill	Owner	1	Male
		Sawmill	Owner	1	Male
TOTAL				5	4 Males 1 females
<i>Total Number of Respondent = 65</i>					

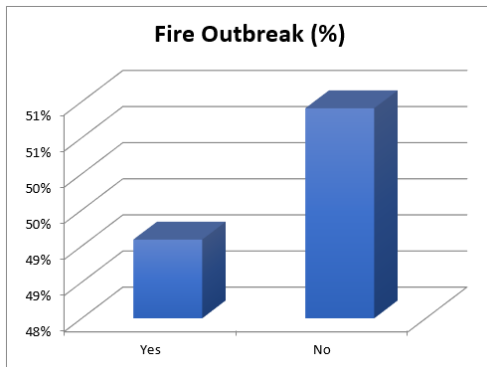
3. Graphical representation of Responses from Markets

3.1 Percentage of businesses using prepaid or post-paid electricity meters

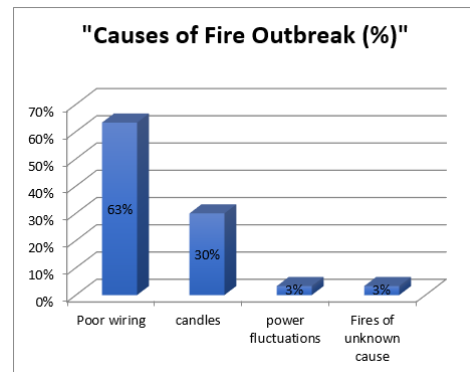


	Meter	
	Postpaid	Prepaid
Makola	3	3
Agbogbloshie 1	0	5
Accra Timber Market	0	10
Dansoman	0	12
Kaneshie	2	5
Madina	0	7
Tamale Central Market	5	0
Tamale Timber Market	5	0
Total Number	15	42

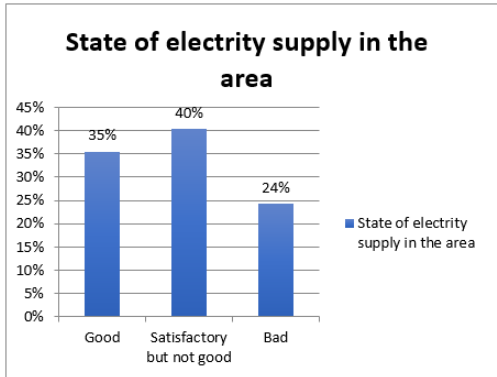
3.3 Incidents of fire outbreaks



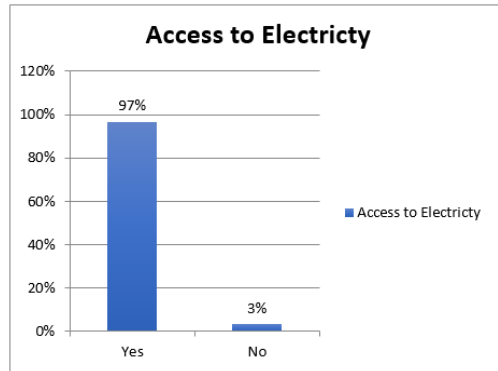
3.4 Causes of fire outbreaks



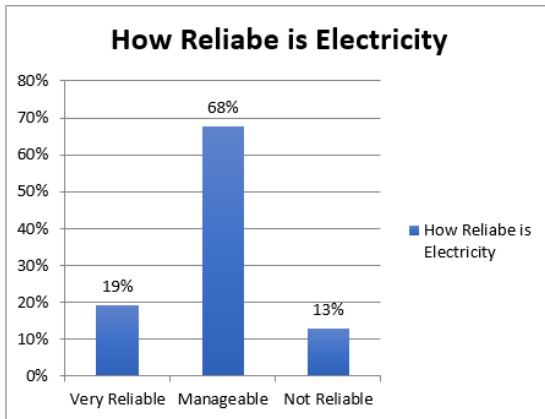
3.5 State of electricity supply



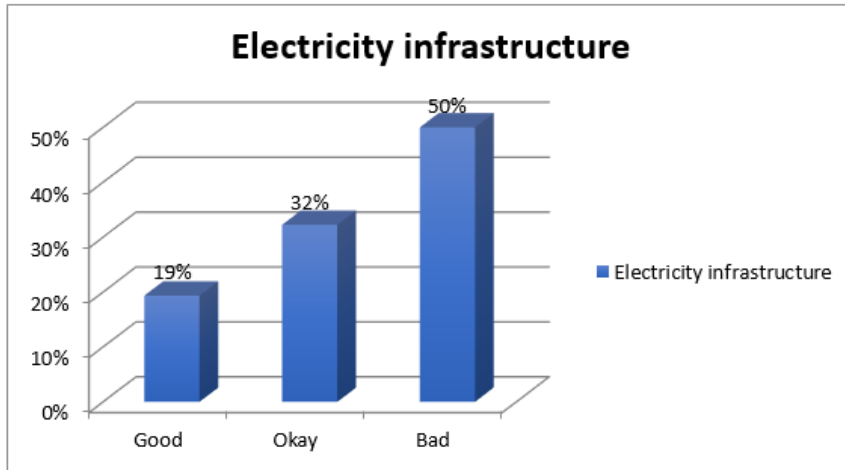
3.6 Access to electricity



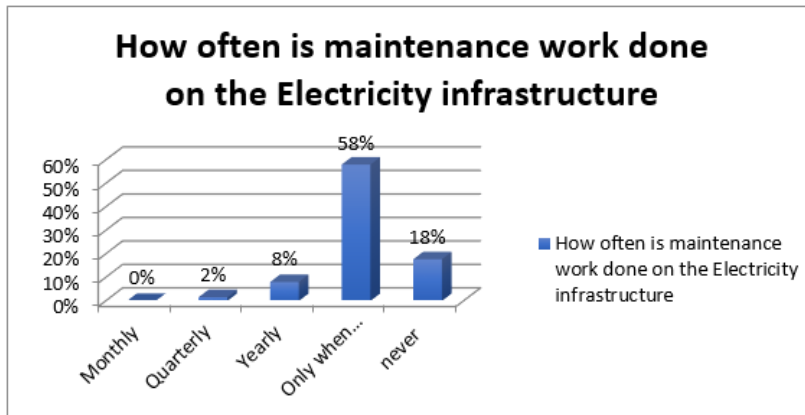
3.7 Reliability of electricity



3.8 State of electricity infrastructure



3.9 Frequency of maintenance works



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