



Ghana Bridge Power Project

EARLY POWER LIMITED, GHANA

Abbreviated Resettlement Action Plan

60K36303

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Glossary

CCGT	Combined Cycle Gas Turbine
CLO	Community Liaison Officer
EC	Energy Commission
EIA	Environmental Impact Assessment
EC	Energy Commission
ECG	Electricity Company of Ghana
EHS	Environmental Health and Safety
EPA	Environmental Protection Agency
EPL	Early Power Limited
EMS	Environmental Management System
ESMP	Environmental and social management plan
ESIA	Environmental and social impact assessment
GE	General Electric
GEPA	Ghana Environmental Protection Agency
GoG	Government of Ghana
GWC	Ghana Water Company
HSE	Health and Safety Executive
IFC	International Finance Corporation
KTPP	Kpone Thermal Power Plant
LPG	Liquefied Petroleum Gas
LVD	Land Valuation Division
MW	Mega Watt
MOFA	Ministry of Food and Agriculture
NGO	Non-Government Organisation
OCGT	Open cycle gas turbine
OP	Operational Policy
PAP's	Project Affected Persons
PPA	Power Purchase Agreement
PS	Performance Standard
RoW	Right of Way
SEP	Stakeholder Engagement Plan
TCPD	Town and Country Planning Development
TFC	Tema Fuel Company
THIA	Tema Heavy Industrial Area
TMA	Tema Metropolitan Area
TOR	Tema Oil Refinery
TTPC	Tema Thermal Power Complex
VRA	Volta River Authority

1 Introduction

1.1 Overview

This document is the Abbreviated Resettlement Action Plan (ARAP) for Early Power Limited (EPL) for the Bridge Power project, located in Tema Heavy Industrial Area (THIA), in the Ghanaian port town of Tema. This document covers issues of physical and economic displacement of Project Affected Persons (PAPs) consistent with World Bank Group (WBG)/International Finance Corporation (IFC) and African Development Bank (AfDB) requirements.

1.2 Background to the Project

The EPL Bridge Power Project (“the project”) has been developed in order to establish the supply of electrical energy as quickly as possible to support the Government of Ghana (GoG) short-term strategy to increase the power capacity available to the country, with expected completion in quarter three (Q3) 2018.

A consortium of Endeavor Energy, General Electric (GE) and Sage Petroleum (Sage) has been formed under the local company EPL to develop the project and contract with Electricity Company of Ghana (ECG).

The project is to be located on brownfield land within the THIA, in the heavy industrial area of the Ghanaian port town of Tema. The regional location of the project is shown on Figure 1-1 and locations of the project infrastructure are shown on Figure 1-2.

1.3 Project Description

The project includes the development of power plant facilities, comprising two power plant sites, a fuel storage tank farm and fuel and water delivery pipelines. The power plant facilities are to be constructed across two sites in three development phases.

Both Power Plant Site 1 (PPS1) and Power Plant Site 2 (PPS2) are located on brownfield land approximately 200-250m east of the Volta River Authority (VRA) Tema Thermal Power Complex (TTPC). Adjacent land use includes offices, maintenance and operations facilities, and a paper processing company. The tank farm is located approximately 600m east of PPS1 and 350m northeast of PPS2, also within brownfield industrial land. A mixture of brownfield and industrial / commercial land uses occupy the areas immediately surrounding all project infrastructure components.

The location of PPS1 is confirmed, with signed land agreement, whilst the final boundary of PPS2 is in the latter stages of agreement. PPS1 (development phases 1 and 2) will comprise mobile trailer mounted turbine units in open cycle gas turbine (OGCT) (Phase 1) and combined cycle gas turbine (CCGT) (Phase 2) configurations. PPS2 (development phase 3) will comprise sprint turboshaft gas turbines in combined cycle configuration..

The sites will provide a total generation capacity of 400 MW on completion of Stage 2. The power from PPS1 will initially be evacuated via underground connection to the existing ECG Station H switchyard within the VRA TTPC. During phase 2 of Stage 1, a new 161kV switchyard will be installed to allow delivery of power to existing 161kV overhead lines, via a

new transmission spur. This will run from the Stage 1 site for approximately 350m north along the eastern side of the storm drain and connect into the existing east-west running 161kV lines.

Power from PPS2 (development phase 3) will be delivered via new 161kV switchyards to the existing overhead lines at a separate connection point to Stage 1 phase 2.

The current schedule for the development phasing is summarised as follows:

Stage 1:

- Pre-NTP (notice to proceed) to the main construction Contractor: end March 2017;
- Full NTP: end April 2017;
- Phase 1: Open Cycle – 9 months from full NTP (or 10 months from pre NTP) (evacuation via 33kV underground line to ECG Station H, within the VRA TTPC); and,
- Phase 2: CCGT – 24 months from pre NTP (23 months from full NTP) - (option for evacuation via 33kV line or 500m 161kV spur to main 161 line north of the site.

Stage 2 – indicative at present:

- NTP anticipated end March 2018;
- 22 months to commissioning of combined cycle installation.
- Evacuation to adjacent 161kV line

The plants will initially fire liquefied petroleum gas (LPG). A pipeline will transport the LPG from the existing Tema Oil Refinery (TOR) jetty to the TOR site, through the tank farm, then to the PPS1 and PPS2 sites. It is expected that the project will switch to natural gas within 5 years of completion on condition that natural gas is provided to the project by the Government of Ghana (GoG).

A new pipeline from the Ghana Water Company (GWC) municipal supply network connection, will be developed approximately 1.2km south of the plant. It will follow within the same Right of Way (RoW) as the fuel pipelines.

Although the project is located in an industrial area, some small business users such as kiosk vendors and farmers are operational in the area. PPS1 was being farmed at the time of the first site visit. PPS2 is currently understood to be unoccupied and not under cultivation¹. In addition, five kiosks are located along the proposed pipeline route (one abandoned) and one kiosk within the tank farm site. There were also signs of an abandoned farm along the pipeline route during earlier site visits, but no one has returned to farm the site.

Although the number of kiosks and farm uses are few, economic displacement impacts will result from project development. Impacts of this nature can result in poverty and / or dislocation of communities and the severance of extended support networks such as childcare. If not managed and mitigated appropriately, resettlement and/or economic displacement impacts can cause hardship for those affected and can result in controversy, time delays, and considerable cost overruns for the project.

Surveys were conducted at each kiosk as part of the ESIA completed in September 2015 and updated in June 2016. The farmers were identified and surveyed in May-June 2016. The kiosks and farmers do not have legal tenure, but have located informally within the project affected

¹ This site will be surveyed during the forthcoming ESIA amendment and the ARAP may be revised if required.

area. Nonetheless, these small businesses and farmers will be economically displaced by the project. As such, EPL is developing an appropriate ARAP in accordance with IFPCS5 and AfDB requirements, including measures to address economic displacement and associated compensation and relocation to be completed prior to construction.

Along with experiencing economic displacement, two of the kiosk vendors also reside at least part-time in the kiosks with family members. These vendors will also therefore be physically displaced by the project appropriate compensation and relocation measures are proposed to mitigate potential project affects as part of the ARAP.

1.4 Efforts to Minimise Displacement

1.4.1 Alternative Sites

During the feasibility studies for this project, three alternative sites were considered. These included an alternative location at Aboadze and one in a coastal area approximately 200km to the west of Tema. In addition, an alternative site within the VRA TTPC was considered for the project, but unfortunately the use of these sites was not feasible.

1.4.1.1 Aboadze

Aboadze lies approximately 200km west of Tema. The alternative site is located within the existing VRA Takoradi Thermal Power Plant complex and was considered viable due to the potential availability of gas supply from the Ghana gas pipeline and West African Gas Pipeline and the proximity to the coast should additional imported fuel be required. The site was withdrawn due to the expanding requirements of other existing and proposed projects in the area and has since been developed as the Emeri Power Project.

1.4.1.2 Sanzule

A proposed site at Sanzule, in southwest Ghana was also considered due to the proximity to the tie in to the gas pipeline from the offshore gas fields. The potential site forms part of a large area of approximately 800 acres, located approximately 2km east of the town of Sanzule (8km northwest from Essiama), adjacent to the Gulf of Guinea, approximately 100m inland from the sea. The area was indicated to be owned by families from a local community, located approximately 2km to the east of Sanzule, down a thin (approximately 100m wide) coastal bar strip which borders the 800 acres.

A site walkover identified that from an environmental and social perspective this site would have much more sensitive developmental issues. It is a completely greenfield site with potential resettlement issues and impacts to indigenous people. There was also a lack of necessary infrastructure in the area needed to support the development, such as fuel supply and transmission infrastructure and good quality road network to enable efficient construction.

1.4.1.3 Tema

An alternative site within the VRA TTPC was significantly advanced before the VRA withdrew from negotiations unexpectedly.

The development sites ultimately selected (PPS1 and PPS2) were chosen because they would not interfere with existing developments and underground services in the area. The VRA has

confirmed that these sites have not been defined for future expansion of the TTPC. The sites are also considered more practical from an infrastructure perspective due proximity to the proposed tank farm and the availability of existing RoW for the required fuel and water pipelines.

1.4.2 Site Layout Alternatives

The layout of the plant has been adapted so that existing transmission systems can be used where possible. Evacuation of electrical energy from PPS1 will initially be via an underground cable into existing connections into the local ECG switchyard within the TTPC and 33kV distribution system. During Phase 2 of the project when the TM2500+ units are converted to CCGT mode, evacuation of power from PPS1 will be through a new 161kV switchyard and short (~500m) new 161kV overhead line that will run adjacent to the storm drain and linking in to the existing 161kV line which run east-west to the north of the sites.

Power from PPS2 will be evacuated via new 161kV switchyards to existing overhead lines at a separate connection point to Phase 2.

1.4.3 Pipeline Alternatives

The LPG gas supply route has been chosen to minimise: the disturbance of undeveloped land, the requirement for a new RoW, and disturbance of people by construction within existing RoW corridors where possible. The existing Tema Oil Refinery (TOR) pipeline RoW will be used from the jetty to the TOR site. The middle section of the pipeline from the TOR to tank farm will utilise a new pipeline RoW, but one that had already been obtained by Sage Petroleum for pipelines to its existing tank farm, located adjacent to the proposed EPL tank farm. Two short additional RoWs have been obtained for the LPG pipeline between the tank farm and plant sites.

To minimise disturbance, the routes for the water pipeline, from the tie-in to the GWC supply at Valco road to the tank farm and on to the power sites, will be (if acceptable to Ghana Water) within the same RoWs as for the LPG line. Diesel fuel for use as back-up power supply will be supplied to the power sites from the Quantum petroleum site. To minimise disturbance, the diesel supply pipelines will be routed alongside the LPG and water pipelines between the tank farm and power plant sites.

1.4.4 Conclusion

The site selection and design process for the plant layout, connections for export of electricity and siting of new pipelines were designed to enable the use of existing infrastructure and avoid existing uses and facilities where possible. Whilst it was not possible to completely avoid displacement impacts, the proposed approach has minimised disturbance to people and the environment as far as is practicable.

1.5 Purpose and Scope of the ARAP

The purpose of the ARAP is to detail the procedures that will be followed to resettle and restore the livelihoods of PAPs as early as possible in project development timeframe. This is required to meet the permit requirements of the Ghana's Environmental Protection Agency and to meet the project's commitment to international standards which the project has adopted.

The scope of work for the development of this ARAP therefore considers national requirements of Ghana, IFC Performance Standard 5 (Land Acquisition and Involuntary Resettlement, 2012) (IFC PS5) and requirements of the AfDB Involuntary Resettlement Policy (AfDB, November 2003). Further details on legislation and international standards are presented in Section 2 below.

Both the AfDB Resettlement Policy and IFC PS5 recognise the need to provide resettlement, compensation, and / or livelihood restoration assistance to persons that are currently utilising project affected land, but have no recognizable legal right or claim to the land they are occupying, provided that this is established prior to the cut-off date for eligibility for compensation. Thus, the displacement of the kiosks and farmers from the project site is addressed in this ARAP. The ARAP process was conducted in accordance with the following principles:

- Affected people are fully informed and consulted on their legal rights, resettlement preferences and alternatives, and are given opportunities to participate meaningfully in the planning, implementation and monitoring of the resettlement;
- Prompt and effective compensation is paid to affected people at full replacement cost, and prior to land take;
- Compensation packages emphasize in-kind replacements, where possible;
- The required transitional support and development assistance is provided to affected people, to enable them to restore / improve their livelihoods and standards of living; and,
- Particular attention is paid to vulnerable groups among the affected population.

The following steps have been undertaken in the ARAP process:

- Establishing the legal and guidance framework for managing displacement impacts, including national and international requirements;
- Identification, consultation with and detailed socio-economic survey of the PAPs;
- Associated socio-economic analysis, including establishing the extent of vulnerability of the PAPs;
- Inventory and valuation of the crop assets to establish the basis for associated compensation;
- Consultations to identify potential alternative land of comparable productive value for relocation (no appropriate land was identified);
- Consultation with PAPs on potential options for livelihood restoration or improvement measures. These may include for example assistance to diversify income generating activities (such as training in new skills), financial management training and credit opportunities, and business and enterprise training; and,
- Establishing the necessary steps for implementation including:
 - Confirm final compensation / implementation budget, including all financial compensation, and costs for land acquisition (if applicable), transitional support, livelihood restoration measures and independent monitoring;
 - Establish the grievance and redress mechanism;

- Confirm the roles and responsibilities within the EPL team regarding the implementation process; and,
- Confirm requirements for monitoring and evaluation.

1.6 Structure of the ARAP

The content of this document is as follows:

- Section 1: Introduction;
- Section 2: Legal and Institutional Framework;
- Section 3: Socio-Economic Baseline;
- Section 4: Identification of Project Impacts;
- Section 5: Eligibility and Entitlement
- Section 6: Valuation and Compensation;
- Section 7: Resettlement Sites
- Section 8: Livelihood Restoration and Enhancement;
- Section 9: Stakeholder Engagement;
- Section 10: Institutional Arrangements;
- Section 11: Monitoring and Evaluation; and
- Section 12: Estimated Budget.

Figure 1-1: Regional Project Locations

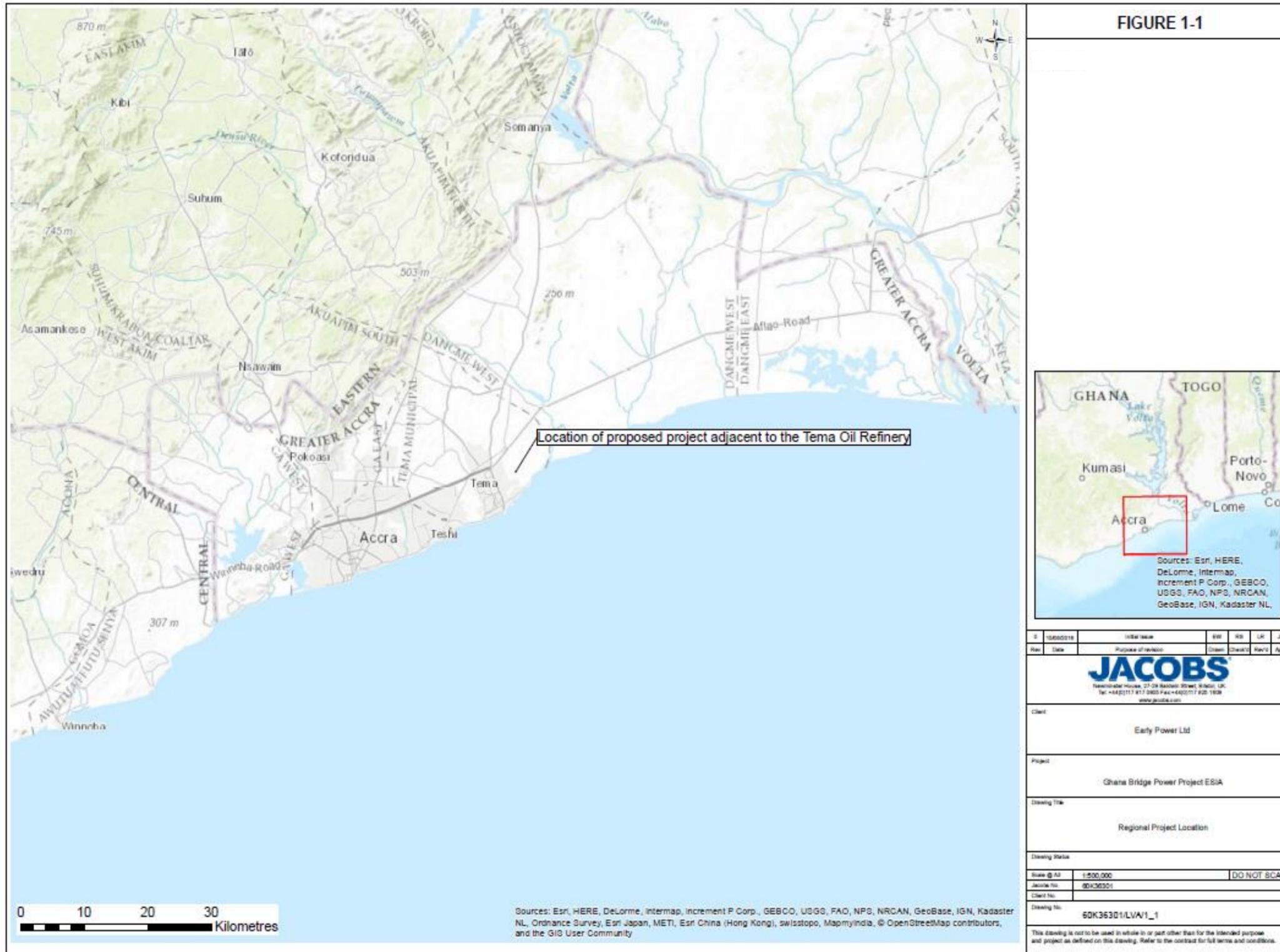
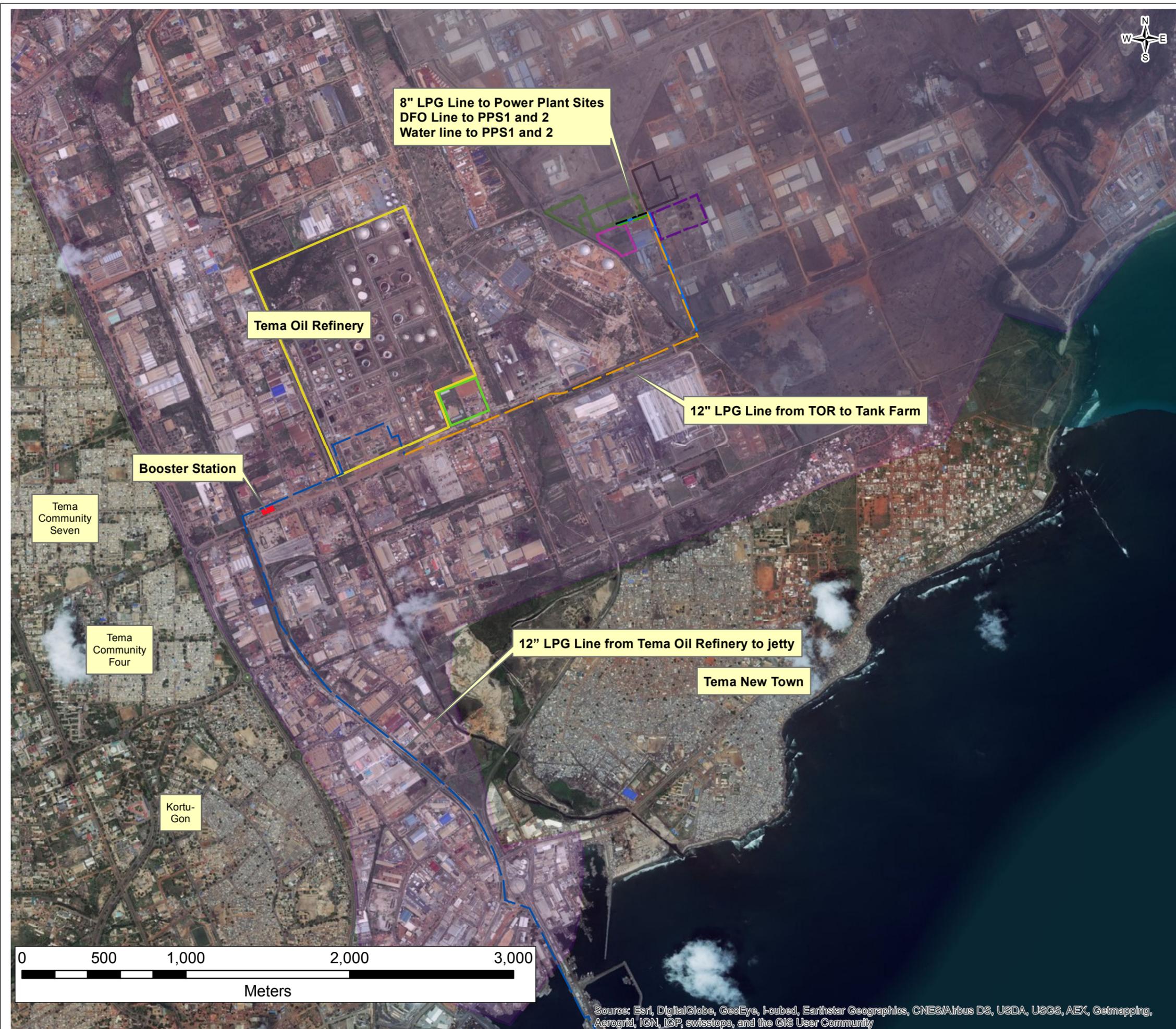
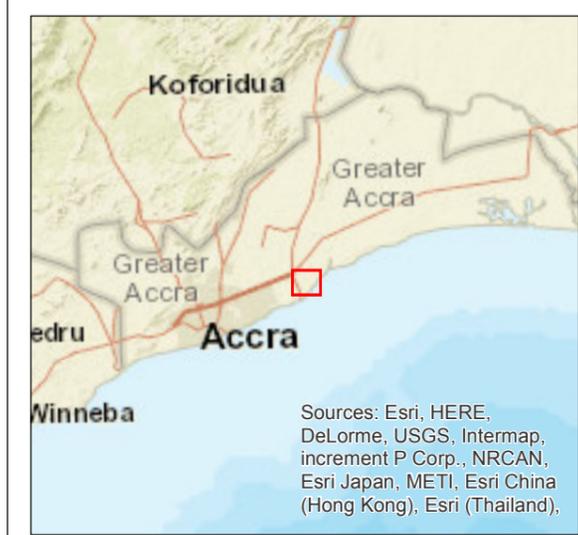


FIGURE 1.2



Legend

- 12 " LPG Pipeline (Overground)
- 12 " LPG Pipeline (Underground)
- 8 " LPG Pipeline to Site (Underground)
- Diesel Pipeline
- Water Pipeline (Underground)
- Tema Oil Refinery
- Ghana Bridge Power Plant Site 1
- Ghana Bridge Power Plant Site 2
- Quantum Terminals Limited Tank Farm
- LPG Tank Farm
- Tema Heavy Industrial Area (THIA)
- Ghana Oil Company (GOIL)



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2 Legal and Institutional Framework

2.1 Overview

The following provides a brief summary of the international and national legislation and standards applicable to ARAP.

This section outlines the principal policy and legislative framework that pertains to land acquisition and involuntary resettlement in Ghana. It provides a summary of the relevant IFC and AfDB policies. Both the local legal and international guidance frameworks provide mechanisms for ensuring compensation of PAPs in a transparent manner.

2.2 Applicable National Requirements

2.2.1 Governance Structure of Ghana

2.2.1.1 Overview

In Ghana there are two parallel government systems operating at the local level; the district assembly administrative structure and the traditional administrative system. The district administration consists of elected representatives and central government appointed personnel, whereas the traditional administration is derived from the chieftaincy institutions. At the community level, an elected assembly person serves as the main link between the district assembly and the community.

Chiefs and elders comprise the traditional administrative institution and they have both judicial and executive functions within the communities. In Ghana, lands are acquired by either private treaty or compulsorily via the enabling legislation described below. Ghanaian Law provides that involuntary acquisition of private property must be done in accordance with laid down statutory procedures. Initially, we consulted the Chief of Tema for this project and he is aware of the potential community impacts that would occur.

2.2.1.2 Constitution of the Republic Of Ghana

The Constitution of the Republic of Ghana (1992) upholds the principle of private ownership of lands. Adequate safeguards from deprivation of private property rights have been provided for in the 1992 Constitution. Even the state's inherent powers to compulsorily take possession of or acquire private property rights have been considered and somewhat controlled.

Article 20 of the constitution prescribes that under no circumstance should private properties be compulsorily taken unless there are justifiable grounds for such acquisition, which invariably must be in the public interest. It is expressly provided in Article 20 (Section 1(a) and Section 1 (b)) that "No property of any description or interest or right over any property shall be compulsorily taken possession of or acquired by the state unless:

- (i) The taking of possession or acquisition is necessary in the interest of defence, public safety, public morality, public health, town and country planning or development or utilization of property in such a manner as to promote public benefit; and

- (ii) The necessity for the acquisition is clearly stated and is such as to provide reasonable justification for causing any hardship that may result to any person who has an interest in or right over the property.”

Section 2 (a) notes that sufficient provision must be made for the prompt payment of fair and adequate compensation and Section 2 (b) indicates that aggrieved persons must have right of access to the High Court for redress. Article 20 (2) expressly stipulates that where the compulsory acquisition involves the displacement of any inhabitants, the state shall resettle them on suitable alternative site having regard to their socio-cultural values and economic wellbeing.

2.2.1.3 Farm Lands (Protection) Act 1962 (Act 107)

The Farm Lands Act upholds the principles that where a person, in this Act referred to as a farmer, acquires land after the commencement of this Act for the purposes of farming and does not farm a part or the whole of that land for a period of eight years from the date of the acquisition, his title to the whole of the land or that portion that has not been farmed shall be deemed for all purposes to have been extinguished.

Where a farmer has, in good faith, at any time after the thirty-first day of December, 1940 and before the commencement of this Act, acquired any land by customary law or otherwise in a prescribed area for purposes of farming and has begun farming on that land within eight years from the date of such acquisition, this section shall, notwithstanding any defect in the title to the contrary, operate to confer valid title on such farmer provided that the land in question had not been farmed by any other person for a period of eight years previous to the acquisition by the farmer.

Any person who procures or attempts to procure any other person to give up possession of land by any means other than by due process of a Court of competent jurisdiction shall be guilty of a misdemeanour.

2.2.1.4 The State Lands Act 1960 (Act 125 as Amended)

This is the principal Law under which private lands could be compulsorily acquired. The Law empowers the President to acquire any land for the public benefit. The Act and its Regulation, that is State Lands Regulation 1962 LI 230, details out the mechanism and procedure for compulsorily acquiring lands. It is a mandatory requirement that a copy of the instrument of acquisition be served on any person having an interest in or possession of such lands or be affixed at a convenient place on the land and be published thrice in a newspaper circulating in the district where the land is situated.

The Act emphasizes the payment of compensation to the victim of acquisition made under the Act. The basis of the said compensation should be either the market value or replacement value. Costs of disturbance and incidental expenses or other damage suffered are to be considered in the award of compensation.

2.2.1.5 Administration of Lands Act 1962 Act 123

Act 123 of 1962 was enacted to facilitate the management and administration of Stool lands (and other lands – as discussed below). The Act empowers the Minister responsible for the lands to manage Stool lands in accordance with the provision of the law. The entitlements are

however to be assessed by giving due consideration to the values of the land (and other losses suffered) and the benefits to be derived by the people in the area (by way of the use to which the state is going to put the land).

2.2.1.6 The Ghana Land Policy 1999

The Government of Ghana in 1999 put together the Land Policy to serve as a broad framework and policy guidelines aimed at enhancing land management systems, land use, conservation of land resource and enhancing environmental quality. All these are intended to ensure coordinated and orderly use of land, a vital resource, by present and future generations. Ultimately the policy seeks to give protection to proprietary rights and promote the concept of prompt payment of adequate and fair compensation for compulsorily acquired lands and also create the enabling environment for community participation in sustained land management.

2.2.1.7 Land Rights in Ghana

Various landholding interests and/or rights exist in Ghana. Five main land categories are discussed below.

2.2.1.8 Allodial Title

In the Ghanaian context, this is the highest interest capable of being held in land. The Allodial title is customarily communally owned and is generally held or vested in stools or skins. In some traditional areas, it is held by clans, families or individuals. Being generally in the form of communal interest in land, it accrues to the entire community and is administered by the recognized traditional authority. The owner of the allodial title has complete and absolute freedom to use and dispose of the land only subject to the restrictions, or limitations or obligations as may be imposed by the general laws of the country. The mode of acquisition of the allodial title is by: discovery by hunters or pioneers of the stool of unoccupied land and subsequent settlement thereof and use by the subject; conquest, purchase or gift.

2.2.1.9 Customary Freehold

The customary freehold is an interest or title which a member of the larger community which holds the allodial title acquires in the communal land. It is an interest which is held as of right by virtue of being a member of the community. It is of indefinite duration and thus potentially subsists forever. The member who holds such interest has the right of beneficial occupation; unfettered use (also subject to the laws of the country). Upon death, the interest devolves on his/her successors in title and infinitum. This interest prevails against the whole world including the allodial title from which it was derived. The customary freehold may however be terminated by the occurrence of any of these occasions; failure of successors, compulsory acquisition by the state; sale or gift by owner, abandonment or forfeiture in rare circumstances where for example the holders denies the absolute title of the allodial owner.

2.2.1.10 Customary Tenancies

These are lesser interests in land and are created by the holder of the allodial title or customary freehold (or common law freehold). These types of tenancies are in nature share cropping arrangements. They are quite common in Ghana and occur when a tenant-farmer

gives a specified portion of the farm produce to the land owner at each harvest time in consideration for use of the land.

2.2.1.11 The Common Law Freehold

This is an interest held for an indefinite period. It is derived from the rules of common law. The holder of this interest has the right of beneficial occupation and may subject to the laws of the land use in any manner. This type of freehold is created only by express grant. The grantor may thus impose terms on the grantee provided such terms are reasonable and not contrary to public policy or unconscionable. Currently, the laws of the land forbid non-Ghanaians from acquiring freehold in lands in Ghana

2.2.1.12 The Leasehold

This type of interest is also a creation of the common law and not Ghanaian customary law. It is an interest in land for a specified period. The leasehold may be granted by the allodial holder in respect of lands in which no conflicting interest exists; or by a customary freeholder; or common law freeholder. In Ghana, leasehold may be for a maximum duration of 99 years. Non-Ghanaians can only acquire leases up to 50 years. Various terms and conditions may be imposed by the grantor including the payment of rent as consideration for the grant.

2.2.2 Relevant Government Agencies

The key governmental institutions responsible for administration of government lands and/or resettlement/livelihood restoration activities include:

- The Public and Vested Lands Management Division of the Commission;
- Land Valuation Division of the Lands Commission
- Land Registration Division of the Lands Commission;
- Survey and Mapping Division of the Lands Commission;
- Ministry of Food and Agriculture (MOFA);
- Environmental Protection Agency;
- Office of the Administrator of Stool Lands;
- The Local Authorities or Assembly; and,
- Department of Town & Country Planning.

2.2.2.1 The Public and Vested Lands Management Division of the Commission

The Public and Vested Lands Management Division of the Commission (established by the Lands Commission Act, 2008, Act 767) is the principal land management organization of the government. All public lands are vested in the President of Ghana and held in trust by him for the people of Ghana. The Public and Vested Lands Management Division manage all public lands on behalf of the President. In each of the ten regions of Ghana, branches, known as the Regional Lands Commission, performs the function of the Lands Commission. In addition to managing public lands on behalf of government, other mandates include:

- Advise the government and local authorities on policy matters, and to ensure that the development of individual parcels of land is consistent with area development plans; and,
- Advise on and assist in the execution of a comprehensive program of land title registration.

The acquisition of any rights of exclusive possession over public lands would necessitate discussions with the relevant Regional Lands Commission for a lease over the selected site.

2.2.2.2 Land Valuation Board (LVB)

It was established in 1986 (PNDC Law 42) as Land Valuation Board (LVB), through a merger of valuation divisions operating within different ministries. However, the LVB was brought under the Land Commission as the Land Valuation Division with the promulgation of the new Lands Commission Act 2008, Act 767. The LVD is responsible for all valuation services for the government, including assessing compensation to be paid as a result of land acquisition or damage to an asset in view of a government project. The Division keeps rates for crops, which are applicable nation-wide.² The LVD has offices in all the ten regions of Ghana and 44 districts offices. The district offices are involved only in 'rating valuation' and that any valuation taking place has to be undertaken by the Regional offices which have certified valuers. The LVD also keep records of private sector certified valuers.

2.2.2.3 Land Registration Division of the Lands Commission

It was established in 1986 as the Title Registration Advisory Board under section 10 of the Lands Title Registration Act, 1986. However, it was brought under the Lands Commission as the Lands Registration Division with the promulgation of the Lands commission Act 2008, Act 767. The Division ensures registration of title to land and other interests in land; maintains a land register that contains records of land and other interests in land; and ensures registration of deeds and other instruments affecting land, among other functions.

2.2.2.4 Survey and Mapping Division of the Lands Commission

The Survey Department was established in 1962 under the Survey Act 1962, Act 127. The Department was brought under the Lands Commission as the Survey and Mapping Division with the promulgation of the Lands Commission Act 2008, Act 767. The Division supervises, regulates and controls the surveys and demarcation of land for the purposes of land use and land registration. It also supervises, regulates, controls and certifies the production of maps. It is responsible for planning all national surveys and mapping among other functions.

2.2.2.5 Ministry of Food and Agriculture (MOFA)

The MOFA is the lead agency and the government entity responsible for developing and executing policies and strategies for the agriculture sector. The Ministry's plans and programmes are developed, coordinated and implemented through policy and strategy frameworks. MOFA facilitated the preparation of the Food and Agriculture Sector Development Policy (FASDEP II) and the Medium Term Agriculture Sector Investment Plan

² In addition to the LVB, the MOFA produces an alternative crop value calculation methodology described in further detail in section 6.

(METASIP 2010-15). The MOFA provides production data on local crops and provided key crop costing information during the valuation process for this ARAP.

2.2.2.6 Environmental Protection Agency (EPA)

The EPA, established under the EPA Act, 1994 (Act 490), is responsible for the protection of the environment, including the human/socio-economic environment as well. Its functions include the following amongst others:

- Advise the Minister on the formulation of policies on all aspects of the environment and in particular make recommendations for the protection of the environment;
- Ensure compliance with any laid down environmental impact assessment procedures in the planning and execution of development projects, including compliance in respect of existing projects;
- Act in liaison and co-operation with government agencies, district assemblies and other bodies and institutions to generally protect the environment; and,
- To promote effective planning in the management of the environment.

The EPA is the main government body for receiving and reviewing all Environmental and Social Impact Assessment reports and associated documentation, including ARAP reports. The EPA has offices in each of the ten regions of Ghana and in some districts such as Tema. The Agency will receive the ARAP for review and will be apprised of progress on ARAP implementation along with the main project construction and operation activities.

2.2.2.7 Office of the Administrator of Stool Land (OASL)

The OASL institution was established by the Office of the Administrator of Stool Land Act, 1994. It is intended to manage revenue drawn from stool/skin lands, by establishing a stool land account for each stool, collecting revenue into this account, and disburse these monies to the stool, to the traditional authority and to the related District Assembly. It is placed under the overall control of the Lands Commission.

2.2.2.8 The District Assembly and Local Administration

In Ghana there are two parallel government systems operating at the local level; the district assembly administrative structure and the traditional administrative system. The district administration consists of elected representatives and central government appointed personnel, whereas the traditional administration is derived from the chieftaincy institutions. At the community level, an elected assembly person serves as the main link between the district assembly and the community.

Chiefs and elders comprise the traditional administrative institution and they have both judicial and executive functions within the communities.

In the Tema area, all community land (non state-owned land) is termed “Stool Lands” and comes under the control of the Paramount Chief, but the right of use lies with the families who are direct beneficiaries of any returns from the land. The Stool is the custodian of the land and as such can release land for projects of community or national interest. They can also reassign land, for example making land available to compensate displaced farmers.

2.2.2.9 Tema Metropolitan Assembly

The Tema Metropolis was created from the Tema Municipality in 2007 with the promulgation of Legislative Instrument (LI) 1929. In 2012, the Kpone-Katamanso Sub-Metropolitan Council was carved out of the Tema Metropolis to establish the Kpone-Katamanso District. The Tema Metropolis has three Sub-Metropolitan Councils namely; Tema West, Tema East and Tema Central.

In accordance with the Local Government Act, 1993 (Act 462), the assembly exercises Deliberative, Legislative and Executive functions, including approval of development plans and enforcement of by-laws. As such, the EPL project will require approval by the TMA.

2.2.2.10 Town and Country Planning Department

Established in 1945, it is responsible for designing plans (planning schemes) and controlling settlements. It is no longer an independent department but currently forms part of the TMA Structure. The Town and Country Planning Department have limited role in the process of land acquisition, but are responsible for designing plans and controlling settlements.

2.2.2.11 Traditional Authorities

In the 1992 Constitution, the chieftaincy together with its traditional councils is guaranteed and protected as an important institution in the country. In Ghana, land is predominantly owned by customary authorities (stools, skins, clans and families). Together they own about 78 percent of all lands while the State owns about 20 percent, with the remaining 2 percent owned by the state and customary authorities in a form of partnership (split ownership), (Larbi W O, 2008). Article 267 (1) of the 1992 Constitution states that all stool lands in the country shall vest in the appropriate stool on behalf of, and in trust of the subjects of the stool in accordance with customary law and usage. All revenue from stool lands are collected and disbursed by the OASL.

The State exerts considerable control over the administration of customary lands. All grants of stool land to non-subjects of the stool require the concurrence of the Lands Commission to be valid. No freeholds can be granted out of stool lands. Foreigners cannot own more than 50-year leases in stool and state lands (Article 267(5) of the 1992 Constitution).

2.2.3 Ghana Laws on Compulsory Acquisition

In Ghana, lands are acquired by either private treaty or compulsorily via the enabling legislation described above. Ghanaian Law provides that involuntary acquisition of private property must be done in accordance with laid down statutory procedures.

2.3 International Requirements

The following international standards and guidance have been considered in the preparation of this ARAP:

2.3.1 IFC

According to the IFC PS5, resettlement should be considered involuntary when affected individuals or communities do not have the right to refuse land acquisition that results in displacement, whether physical and/or economic. This occurs in cases of: (i) lawful

expropriation or restrictions on land use based on eminent domain; and (ii) negotiated settlements in which the buyer can resort to expropriation or impose legal restrictions on land use if negotiations with the seller fail.

Performance Standard 5 encourages the project proponent to:

- Avoid or at least minimize involuntary resettlement wherever feasible by exploring alternative project designs;
- Mitigate adverse social and economic impacts from land acquisition or restrictions on affected persons' use of land by: (i) providing compensation for loss of assets at replacement cost; and (ii) ensuring that resettlement activities are implemented with appropriate disclosure of information, consultation, and the informed participation of those affected;
- Improve or at least restore the livelihoods and standards of living of displaced persons; and,
- Improve living conditions among displaced persons through provision of adequate housing with security of tenure at resettlement sites.

2.3.2 AfDB

The AfDB Involuntary Resettlement Policy (AfDB, 2003) requires that projects that involve involuntary resettlement shall be prepared and evaluated according to the following objectives and guiding principles:

- Where loss of economic assets is unavoidable the borrower should develop a resettlement plan. The plan should ensure that displacement is minimized, and that the displaced persons are provided with assistance prior to, during and following displacement. It should be conceived and executed as part of a development program, with displaced persons provided sufficient resources and opportunities to share in the project benefits;
- Displaced persons' former living standards, income earning capacity, and production levels should be improved through the resettlement plan;
- Meaningful consultation with displaced persons and host communities should be undertaken early in the planning process and participation in the resettlement plan process encouraged;
- Particular attention should be paid to the needs of disadvantaged groups among those economically displaced;
- Resettled people should be integrated socially and economically into host communities so that adverse impacts on host communities are minimized;
- Displaced persons should be compensated for their losses at "full replacement" cost prior to their actual move or before taking of land and related assets or commencement of project activities, whichever occurs first; and
- The total cost of the project as a result should include the full cost of all resettlement activities, factoring in the loss of livelihood and earning potential among affected peoples.

In line with AfDB, displaced persons in the following first two groups are entitled to compensation for loss of land or other assets taken for the project purposes:

- 1) Those who have formal legal rights to land or other assets recognized under the laws of the country. This category will generally include people who are physically residing at the project site and those who will be displaced or may lose access or suffer a loss in their livelihood as a result of the project activities; and,
- 2) Those who may not have formal legal rights to land or other assets at the time of the census but can prove that they have a claim such as land or assets that would be recognized under the customary laws of the country. This category may also include those people who may not be physically residing at the project site or persons who may not have any assets or direct sources of livelihood derived from the project site, but who have spiritual and/or ancestral ties with the land (e.g. graveyards, sacred forests, places of worships). This category may also include sharecroppers or tenant farmers, seasonal migrants or nomadic families losing user rights, depending on the country's customary land use rights. Additionally, where resettlers lose access to resources such as forests, waterways, or grazing lands, they would be provided with replacements in kind.

A third group of displaced persons are those who have no recognizable legal right or claim to the land they are occupying in the project area and who do not fall in any of the two categories described above. This category of displaced persons, will be entitled to resettlement assistance in lieu of compensation for land to improve their former living standards (compensation for loss of livelihood activities, common property resources, structures and crops, etc.), provided they occupied the project area prior to a cut-off date established by the borrower and acceptable to the Bank (AfDB, November 2003).

2.3.3 Project Adoption of International Standards

In line with good international industry practice, this ARAP is prepared in accordance with the national requirements described above in Section 2.1 and 2.2, and the international standards required under IFC PS5 (Land Acquisition and Involuntary Resettlement) and associated guidance, and African Development Bank (AfDB) Involuntary Resettlement Policy. AfDB requirements indicate that an ARAP should be prepared where displacement is less than 200 PAPs.

3 Socioeconomic Baseline and PAP Census

3.1 Regional and Local Socio-Economic Context

The proposed project is located on the southeast coast in the Greater Accra region of Ghana. The project will consist of the construction of two power plants on two separate parcels with associated tank farm and fuel and water supply pipelines.

Both Power Plant Site 1 (PPS1) and Power Plant Site 2 (PPS2) are located on brownfield land approximately 200-250m east of the Volta River Authority (VRA) Tema Thermal Power Complex (TTPC). Adjacent land use includes offices, maintenance and operations facilities, and a paper processing company. The tank farm is located approximately 600m east of PPS1 and 350m northeast of PPS2, also within brownfield industrial land. A mixture of brownfield and industrial / commercial land uses occupy the areas immediately surrounding all project infrastructure components.

The nearest settlement to the project is Tema New Town, which is located approximately 2km to the south. Kpone is located a similar distance to the east and several urban communities in the town of Tema are located a little over 2km to the west (Community Four, Community Seven, Community Eight) and 3.5 km north (Tulaku) of the site. Data presented below is for the Tema Metropolitan Area, where the relevant project communities and project site are located.

3.2 Socioeconomic Area of Influence

Within the project area, three main communities were identified as the primary area of influence for the project socio-economic analysis because these communities are in closest proximity to the proposed development and represent the main communities that employment would be likely to come from. This includes Tema New Town to the south, Kpone to the east, and Communities Four, Seven and Nine in Tema located to the west of the development (collectively referred to as Tema herein). Communities to the north of the project are located approximately 3.5km away, across the N1 (Accra – Aflao) motorway and are not currently predicted to be directly (e.g. transport impacts) or indirectly (e.g. ambient air quality impacts) affected by the project. These areas were, therefore, considered unlikely to be within the project area of influence. Data on the population size for each of these communities is not available; therefore, information for the larger Tema Metropolitan Area is presented here.

3.3 Population Demographics

The total population of the Tema Metropolitan Area according to the 2010 Population and Housing Census was estimated to be two hundred and ninety-two thousand, seven hundred and seventy-three (292,773) persons. In all, females were estimated to be more than their male counterparts, representing 52.2 percent of the population, while males represented 47.8 percent respectively.

Table 3-1: Population Size of the Tema Metropolitan Area

Sex	Population Size	Percentage
Male	139,95	47.8
Female	152,823	52.2
Total	292,773	100

Source: Tema Metropolitan Analytical Report, (Ghana Statistical Service, 2014)

The average household size in the Tema Metropolitan Area is 4.1 persons per household with children constituting the largest proportion of the household at 34.1 percent. The Study Area has a migrant population of 166,506 (75.3%). In terms of nationality, 94.5 percent of the populations are Ghanaians by birth, 0.7 percent by naturalization and the remaining 2.5 made up of foreigners. The highest proportion of the population is in the 25-29 year age group and the smallest being the oldest age group (95-99 years). The Tema Metropolitan area generally can be said to have a youthful population.

3.3.1 Tema New Town

Tema New Town is the nearest settlement to the project site, located approximately 2km to the south from the development sites and can generally be characterized as a mixture of mainly residential with light commercial and industrial properties. Tema Manhean is the native name of the Tema New Town Community. According to the locals, the people of Tema migrated from Israel through to Ile-Ife in present day Nigeria. From Ile-Ife, the early settlers then migrated in batches to the current location of the Tema.

The late Dr. Kwame Nkrumah, the then President of Ghana, acquired the land of Tema for industrial development activities. The industrialization of the area created the need for the locals to resettle all over Tema especially around the harbour area. The main occupations at the time were fishing and farming. However, in later years, farming activities in the area have dwindled due to the major industrialization of the area. Although Tema Manhean is generally inhabited by the native Ga people, in recent times it has become a more integrated community, dominated by the Akans, Ewes and Ga-Adangbes. Due to the decline in economic activity in the area, poverty is becoming more prevalent. According to the Ghana Statics Services, about 80% of the inhabitants of Tema New Town live in poverty while the remaining 20% consist of an equal balance of average income and wealthy residents. Most residents in the area live in kiosks with no proper settlements.

3.3.2 Kpone

Kpone is located approximately 2-3km from the development sites to the east. Similarly to Tema New Town, according to the locals, the people of Kpone initially migrated from Israel through Ile-Ife to Ghana in the Eastern Region and eventually to Kpone driven by industry and political struggles. The town is divided into two major suburbs namely Jorshie and Alata. Prior to central governance in Ghana, the Kpone area was ruled and controlled by the traditional authority. Kpone is a largely residential area.

3.3.3 Tema

The nearest communities to the development sites (Communities Four, Seven and Nine) in Tema town are located a little more than 2km to the west. This area of Tema was initially built and developed by the Tema Development Corporation (TDC). TDC still owns much of the land in the area including the Tema Heavy Industrial Area (THIA) where the project sites are located. This area is considered largely cosmopolitan and would be characterised as a generally urban area with the typical market and services that generally accompany this. Many of the communities within Tema still utilize their traditional names.

3.4 Project Development Sites, Pipelines and Surrounding Land Use

PPS1 is located adjacent to the TTPC and the Kpone Marine Services, Tema Offshore Mooring maintenance and operations facilities, and the J. Q Packing Ghana Limited paper processing company. PPS2 is located on adjacent land immediately to the north/northwest of PPS1 and west of the VRA TTPC. The tank farm is located approximately 200m to the east of PPS1 and 300m east of PPS2. All sites are within the THIA and surrounded by either undeveloped brownfield land or primarily commercial / industrial installations.

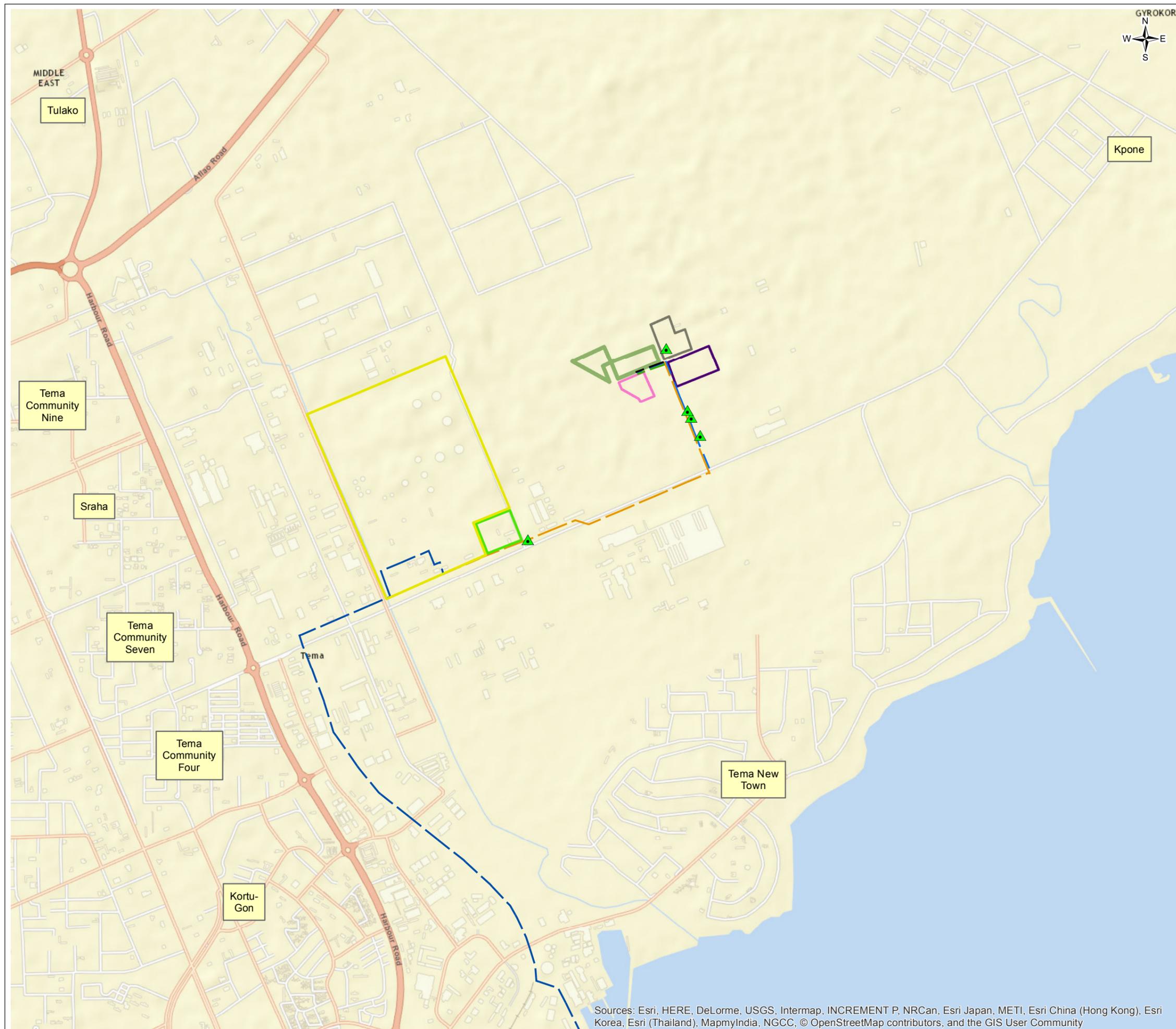
The proposed LPG pipeline route is shown on Figure 1-2 (in Section 1). The proposed LPG pipeline route is 9.2km long in total, with four distinct sections; an above ground 12" diameter section of 5.2km from the Tema Oil Refinery (TOR) jetty to the TOR booster station; and buried sections from the TOR pump station to the tank farm site (12" for 2.6km, including one water crossing), an 8" line for approximately 200m west from the tank farm to PPS1, and an 8" line for approximately 100m further west from PPS1 to PPS2.

Raw water for the project will be provided by the Ghana Water Company (GWC) municipal reticulation network via new pipeline facilities installed alongside the LPG pipeline from Valco Road northwards to the tank farm (approximately 900m in length) and then from the tank farm to PPS2 (approximately 300m in length) and PPS1 (approximately 100m in length).

All of the pipeline routes are within industrial/commercial land with adjacent industrial/commercial facilities. A small number of informal trader kiosks were identified as located on the actual pipeline alignment and will require relocation, as discussed further below. PPS2 is also currently being farmed. The location of these kiosks and the farming areas are shown on Figure 3-1.

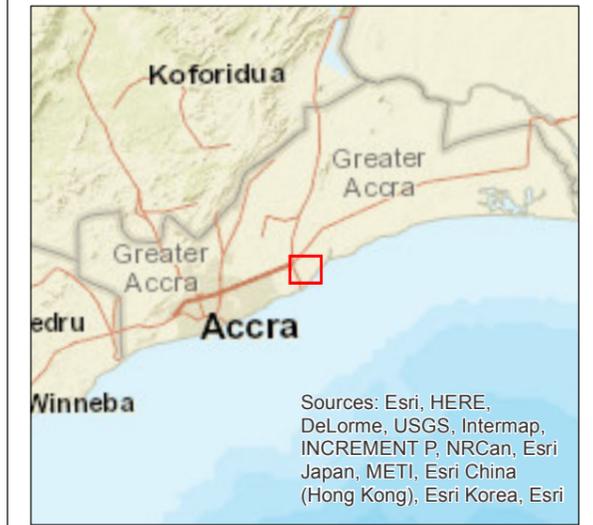
The nearest residential areas are located over 2km from the sites, associated with the outskirts of Tema New Town to the south and the district of Kpone to the east.

FIGURE 3.1



Legend

- ▲ Kiosk Locations
- 12 " LPG Pipeline (Overground)
- 12 " LPG Pipeline (Underground)
- 8 " LPG Pipeline to Site (Underground)
- Diesel Pipeline
- Ghana Bridge Power Plant Site 1
- Ghana Bridge Power Plant Site 2
- LPG Tank Farm
- Tema Heavy Industrial Area (THIA)
- Tema Oil Refinery
- Ghana Oil Company



Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

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Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
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Client			Early Power Ltd			
Project			Ghana Bridge Power Project ESIA			
Drawing Title			Location of Project Affected Businesses and Residential Areas			
Drawing Status						
Scale @ A3	1:45,000		DO NOT SCALE			
Jacobs No.	60K36301					
Client No.	N/A					
Drawing No.	60K36301/LVA/3.1					
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3.5 Detailed Socio-Economic Survey

This section presents information gathered on the eligible PAPs. It provides information on their background, economic activities and the challenges that they are likely to face as a result of displacement due to the development of this project. PAPs for the project consist of five small kiosk/business owners (plus one abandoned kiosk) and five farmers currently cultivating the PPS1 site. Kiosk owners consist of small food and drink vendors, a block maker and a lottery kiosk.

All incomes of these parties were generally reported as being small and business generally comes from the industrial workers in the community. Most vendors expressed concern about disruption of business and potential livelihood loss associated with the project. Some of the business owners could be considered vulnerable, as some reported very low income, at least one is a single woman supporting her family, some were residing in the kiosks at least part-time and most were not from the area. Not all of the vendors were able to be interviewed as one kiosk was confirmed as abandoned after repeated visits by the study team.

Crops currently being cultivated on the PPS1 site include onions, corn (for personal consumption), green peppers, okra, and ayoyo (a type of green vegetable). A small area of farmland was identified adjacent to the pipeline route, approximately 50m northeast from the corner where the route turns north from Valco Road towards the tank farm site. It was confirmed by the EPL land valuer that this land did not lay within the pipeline RoW and so would not be directly affected by the project.

Face-to-face interviews were held with the PAPs in September 2015, and May and October 2016 to collect census level information and verify data collected on previous visits. Additionally, a land and crop valuation of the affected sites was initiated by EPL in October 2016 using a certified local land valuer. The valuation was finalised in February 2017. Findings relating to the ten PAPs are collated in Table 3-2 : Detailed PAP Socioeconomic Data Table 3-2, below. The land valuation report completed for the project is provided in Appendix A.

3.5.1 Kiosks

The kiosk owners ranged from ages 31-45. Kiosks included a lottery agent business; a kiosk selling snacks and live chickens, along with a mobile-money transfer facility; another food preparation and soft drinks vendor; a cement block maker; and, a petty trader that also sells prepared food. The sixth kiosk has been abandoned for over a year and the owner has not been identified despite several efforts from the survey team.

The kiosks have been located in the area for between 1 and 6 years. None of the kiosks have legal land tenure, but some of the kiosk owners have been given permission by the adjacent businesses to operate in their current location. Most of the customers for the kiosks come from the local/adjacent industrial businesses and income fluctuates seasonally.

3.5.2 Farmers

The farmers are all originally from Bawku in the far northeast of Ghana and range in age from 20-32. They are generally growing crops for commercial purposes consisting of onions, green pepper, okro, and ayoyo (greens). The farmers have only been located in the area for 1-2 years. None of the farmers have legal land tenure, but they have been given permission to farm in their current location. Three of the farmers are married with children and two are single. Most of the farmers have temporary employees that help them with their farming during the short-term harvest period and farming is their primary occupation.

Table 3-2 : Detailed PAP Socioeconomic Data Kiosks

Number	Owner	Type of Structure	Gender	Age	Primary Occupation	Hometown	Marital Status	Duration of Business	Highest level of education	Total Annual Income Ghana Cedis Income	Supporting Other Family Members	Recent Illness/Symptoms
K1	██████████ ██████████ ██████████	Lotto Kiosk	Male	31	Lottery Agent/taxi driver	Anlo	Single	8 months	██████████ attends university	7,200 (1641 USD)	No	None
K2	██████████	Snack Kiosk, - Sale of live fowls, Mobile-Money Transfer	Male	33	Petty Trader	Dormaa Ahenkro	Married, one child	One year	Primary	5,000 (1140 USD)	Yes supports nieces and nephews with 50 Ghana cedis per month	None
K3	██████████	Banku and Snack Kiosk	Female	35	Food Vendor	Agbozume	Single	6 years		14,400 (3282 USD) (including paying provision to her sister)	Yes - younger sister of whom she gives an allowance of ten Ghana 10 cedis daily	None
K4	██████████	Block Maker and Materials Storage	Male	45	Businessman (other locations)	Gbator	Married with four children	12 years		Not disclosed	No	None
K5	██████████ ██████████	Food Kiosk	Female	40	Food Vendor	Agbozume	Married with three children	4 years		7,200 (600 per month income after expenses) (1641 USD)	Yes, one child still at home	None

Notes: Conversion rate to USD is based upon February 2016 exchange rates.

Table 3-3 : Detailed PAP Socioeconomic Data Farmers

No.	Name	Address	Gender	Age	Primary Occupation	Hometown	Marital Status	Highest level of education	Total Annual Income Ghana Cedis	Supporting Other Family Members	Recent Illness/ Symptoms
F1	██████████	Community 10, Tema	Male	20	Farming (welder by trade)	Bawku*	Single	Primary School	3,000 annual income (684 USD)	No, but 10 employees during peak season	Malaria/Fever. He also has a disabled brother.
F2	██████████	Community 6 Tema	Male	30	Farming	Bawku*	Married, 2 children	None	3,000 annual income (684 USD)	Yes	Wife, children - respiratory
F3	██████████	Sleeps at the farm or in the area	Male	31	Farming	Bawku*	Married – 3 children	Junior High School	4,000 annual income post (912 USD) expenses	Yes	Wife and Children had malaria
F4	██████████	Kiosk along the motorway	Male	29	Farming	Bawku*	Married – 4 children	Junior High School	Estimated at 6,000 (1,368 USD)	Yes	Children malaria
F5	██████████	Adjacent Property	Female	32	Trading (40%) and Farming (60%)	Bawku*	Married - 4 children	Junior High School	1,600 (365 USD)	Yes	Malaria/fever

Notes:

*When PAP first relocated to the Tema area he was homeless for 2 years.

Conversion rate to USD is based upon February 2016 exchange rates.

PAP socio-economic surveys were captured through a formal survey and additional informal discussions over a one year period and thus the data presented here may represent a variation or expansion on their initial response. Survey responses directly relevant to the ARAP process are summarised as follows:

- The surveyed PAPs were a mix of women and men, aged between 20 and 45. Three of the respondents are single, the remaining seven are married with children. All of the kiosk owners and the farmers are primarily dependent upon the income from their business or kiosk to support their livelihood. Seven of the PAPs are also supporting other family members, which may increase vulnerability and many support temporary employees.
- Most of the PAPs completed primary school, three completed junior high school, and one of the PAPs has a university education. Four of the PAPs own their homes, with the remainder renting. Seven of the PAPs have dependents living with them. The greater the number of dependents, the greater the risk is that displacement may disproportionately affect these individuals and their families;
- Only one of the PAPs indicated that they have a secondary occupation (trading/petty trading). All PAPs farm or run their kiosk year round, although business fluctuates seasonally. Crops are sold at the Market in Tema Community 1 and Techiman and a small amount to be consumed by themselves or their family members;
- All but two of the PAPs indicated that they are responsible for spending of household finances. One PAP has access has personal savings with a microfinance group, but the rest did not report any savings, loans, access to credit or current debts.
- Four of the PAPs indicated that they or an immediate family member have experienced malaria in the last six months and one PAP reported that their wife and child had visited hospital for respiratory complaints. The remaining five PAPs did not report any recent illnesses or health complaints. One PAP also reported having a brother that is disabled, which may make him more vulnerable if he provides financial support.
- One of the kiosk owners has access to electricity and running water, but the other four do not have direct access to electricity, water or toilet facilities. One kiosk owner has a generator in his kiosk. Most of the farmers obtain water from the nearby drainage ditches or pipes. All of the PAPs use a bus, bicycle or taxis to get to and from the sites
- Two of the PAPs are believed to be residing in their kiosks at least part time.³

3.6 Vulnerability

The IFC defines vulnerable persons as those who, “by virtue of gender, ethnicity, age, physical or mental disability, economic disadvantage, or social status, may be more adversely affected by resettlement than others and who may be limited in their ability to claim or take advantage of resettlement assistance and related development benefits” (IFC, 2012).

³ During the land valuation process, there did not appear to be enough evidence to confirm residence of one of the parties in the kiosk, but EPL has conservatively assumed that the kiosk owner is residing in the kiosk based upon previous visits.

Key factors which could be considered indicators of vulnerability for some the identified PAPs include:

- Some of the kiosk owners reported less than 800 cedis per month income prior to compensating employees and paying expenses. Given that many of the PAPs are also supporting other family members and some are the head of household with no other income earners, these parties are likely to be more economically and socially vulnerable;
- Some PAPs are also residing in their kiosks or in a kiosk nearby, which indicates that their resources are limited;
- All of the farmers have migrated a long distance in search of work and one reported being homeless for 2 years when he first arrived, indicating economic and social vulnerability; and,
- Only one of PAPs has an advanced education, which indicates that fewer options for alternative livelihoods may be available to the remaining PAPs.

The ARAP process has considered the potential for impacts on vulnerable PAPs and findings indicate that additional support should be provided to those PAPs which are considered vulnerable. Table 3-4 presents a vulnerability matrix for the PAPs.

Table 3-4 : Vulnerability Matrix

No	Affected Person	Primary or sole earner in household	Supporting other Family Members	Higher Education	Residing in kiosk or kiosk/field nearby	Migrated due to financial hardship	Income below 800 per month	Considered Vulnerable
K1	████ ████ ████	Yes	No	Yes	No	No	Yes	No
K2	████ ████	Yes	Yes	No	Yes	Yes	Yes	Yes
K3	████	Yes	Yes	No	Yes	Yes	No	Yes
K4	████	No	No	No	No	No	No	No
K5	████ ████	No	Yes	No	No	No	Yes	No
F1	████ ████	Yes	No	No	No*	Yes	Yes	Yes
F2	████ ████	Yes	Yes	No	No	Yes	Yes	Yes
F3	████ ████	Yes	Yes	No	Yes	Yes	Yes	Yes
F4	████	Yes	Yes	No	Yes	Yes	Yes	Yes
F5	████	No	Yes	No	No	Yes	Yes	Yes

Note: * Was previously homeless which is also considered an indicator of vulnerability

3.6.1 Form of Assistance

As the majority of the PAPs are the primary breadwinners in their households and as many of the PAPs are also supporting other family members, two kiosk owners are living in their kiosks, and many of the PAPs have experienced financial hardship in the past, a number of the PAPs would be considered vulnerable and as such the ARAP will provide an additional safety net for vulnerable households.

Project-affected households that are vulnerable could potentially experience severe hardship during the livelihood restoration process and as such monitoring of these parties will be particularly important. In addition to payment of additional compensation (discussed in the following section), once the relocation process has been completed, visits to each relocated

party will be conducted to ensure that the PAPs retain their place to live, means of income, access to medical care, and access to food. Status of the PAPs will be specifically tracked and reported internally within EPL via the project Community Liaison Officer (CLO). Further detail on management and monitoring roles and responsibilities are included in Section 8.2.

3.6.2 Compensation for Vulnerable PAPs

Compensation assistance to vulnerable PAPs has been determined through consideration of good international industry practice, discussions with EPL's land valuer and professional judgement. The proposed compensation comprises:

- Cash payment for 10 percent of the market value the farmers' crop value for 1 year or 10 percent of annual income from the kiosk;

Additional assistance may be needed depending upon vulnerable parties' needs which may include the following:

- Assistance in the compensation payment procedure (e.g., specifically explain the process and procedures, make sure that documents are well understood);
- Assistance in the post-payment period to secure the compensation money and reduce risks of misuse/robbery; and,
- Counselling in matters such as financial planning and business development.

Additional support options shall be further determined based upon final consultation with the PAPs on the draft ARAP. For planning purposes, the current ARAP implementation budget includes a provisional sum to cover this requirement.

4 Identification of Project Impacts

4.1.1 Project Economic Displacement and Livelihood Impacts – Kiosks and Farming

Five kiosks are located along the proposed pipeline route (one of which is abandoned) and one kiosk adjacent to the tank farm site. In addition, five farmers are currently utilising PPS1 to grow crops. Although these kiosks and farm areas were developed informally and do not have legal tenure, the small businesses and farm land will be physically displaced by the project. Therefore, economic displacement impacts will result from project development. Impacts of this nature can result in poverty and / or dislocation of communities and the severance of extended support networks such as childcare.

4.1.2 Physical Displacement

Along with experiencing economic displacement, two of the kiosk vendors also indicated that they reside at least part-time in the kiosks along with family members. During the land valuation process, there did not appear to be enough evidence to confirm residence of one of the parties in the kiosk, but EPL has conservatively assumed that the kiosk owner is residing in the kiosk based upon previous visits. These 2 vendors (and their dependents) will therefore also be physically displaced by the project and will need to be relocated in accordance with IFC PS5.

These parties have also been assessed as vulnerable to economic and social hardship as they will have to re-establish both their business and their residence and they likely have fewer economic alternatives since they elected to reside in their small kiosks.

Appropriate compensation and relocation support is proposed to mitigate potential project effects as part of this ARAP.

4.1.3 Noise Impacts on Adjacent Properties

During stakeholder consultation meetings conducted in November 2017, it was identified that the security guard working on the adjacent land plot to the north of the PPS1 site also lives in a building located on that land parcel, along with his family. It was also identified during consultation that the JQ factory located adjacent to the south of the PPS1 site contains a number of worker accommodation units, which are used to house expatriate workers who come to Ghana from China on short term contracts.

At present, the ESIA for the project is undergoing an amendment which will consider the latest design changes and associated impacts to these receptors, in particular for noise and safety related issues. In the event that any significant effects are identified that could result in resettlement, this will be covered by an additional resettlement action plan to be developed prior to the next phase of project development.

5 Eligibility and Entitlement

5.1 Overview

In the context of the ARAP, 'entitlement' is a term introduced as an organizing concept for how compensation is assigned to individuals, and what type of compensation they receive. The process begins by linking an array of affected assets and economic activities to an affected interest or legal right, then to a potentially affected party who is deemed 'eligible' or not according to specific conditions. If qualified, the affected party is then a candidate and considered 'entitled' to an appropriate compensation package.

5.2 Eligibility and Cut-Off Date

In order to identify persons who will genuinely be displaced by the project and who are eligible for compensation and assistance, and differentiate from ineligible persons (such as opportunistic settlers hoping to claim benefits), a cut-off date has been established. After the cut-off date, it is considered that the affected parties and wider public have been appropriately informed not to make improvements to, or settle on, the identified project land. Under the requirements of PS5, the project is not required to compensate encroachers after this date.

The cut-off date for eligibility was established on 28th of October 2016. This is the date that the valuation was completed and whereby the final number of affected parties and farmers on the site was confirmed. Any additional persons establishing kiosks or farming plots or other activities on the site after the cut-off date will not be considered as PAPs and will not be eligible for compensation. Because the affected PAPs consist of only 11 persons and in order to minimise advertisement of the process to minimise opportunistic claims, the cut-off date was communicated directly to the PAPs during meetings and one-to-one interviews.

Similarly, fixed assets (such as built structures, crops, fruit trees, and woodlots) established after the date of completion of the assets inventory will not be compensated.

5.3 Entitlement Matrix

The entitlement matrix captures all PAPs, the characteristics of the impact, and the types of compensation/reinstatement due to them. All PAPs will be entitled to compensation measures and/or physical resettlement assistance, depending on the nature of lost assets and scope of the impacts. In general terms, the PAPs will be entitled to one or more of the following types of compensation and assistance:

- 1) Compensation for loss of earnings from kiosk sales;
- 2) Compensation for loss of access to land to conduct business activities;
- 3) Compensation for loss of the residential dwelling;
- 4) Compensation for loss of agricultural land;
- 5) Transitional financial support; and,
- 6) Compensation to help vulnerable parties during the transition phase.

Details of the PAPs entitled to some form of compensation are described in Table 3-2 and Table 3-3. The nature of the compensation proposed following assessment of entitlement and eligibility is provided in Section 6.

Table 5-1 : Entitlement Matrix

PAP Category	Type of Loss	Eligibility Criteria	Compensation for Loss of Asset	Compensation for Loss of Income	Disturbance/Transitional Support Costs	Livelihood Assistance
Famers on PPS1	Permanent loss of crops. Loss of farming as an economic activity	Permanently farming land within the PPS1 site for at least one year as of October 2016	Financial compensation for crop loss	Financial compensation	Physical and financial support during the transition	Livelihood Restoration measures such as financial management and development programs for PAPs if required
Kiosks on the Pipeline Route	Temporary loss of sales and economic activity	Permanently operating kiosk business for at least one year as of October 2016 that would be directly impacted by construction of the pipeline.	Financial compensation for loss of 2 months of business	Temporary Financial Compensation	Physical and financial support during the transition	Livelihood Restoration measures such as financial management and development programs for PAPs if required
Kiosks with Residents	Loss of residence	Residing in the kiosk at least 5 days per week	Financial compensation for rental of a new property	Financial compensation a and sponsorship of a 3 year rental agreement including agency support	Physical and financial support during the transition	Livelihood Restoration measures such as financial management and development programs for PAPs if required
Vulnerable Parties	Loss of income earning capacity	Qualifies under one of the above eligibility criteria and is considered 'vulnerable' per IFC standard criteria (see Section 3.6).	Financial Compensation during the transition period	Temporary Financial Compensation	Special allowance to assist project affected persons in transition period. Fixed amount of financial support.	Livelihood Restoration measures such as financial management and development programs for PAPs if required

6 Valuation and Compensation

6.1 Introduction

The purpose of the valuation exercise was to seek an independent assessment of the values of properties and assets to be affected by the project as a basis of determining the total amount payable as part of the assessment of livelihood restoration program for the project. The scope of the valuation covers the agricultural land and kiosks affected. Disruptions to business/livelihood and residents were considered for compensation and for the provision of support services for the period of disruption of business/livelihood and for relocation of the business/livelihood and residence.

6.2 The Basis for the Valuation

A valuation report was completed by Prime Eval Consult Limited ('Prime Eval') on February 7, 2017. Prime Eval is a member of the Ghana Institution of Surveyors. The valuation was based upon 3 visits to the site, consultation with the affected parties and with relevant regulatory agencies. Prime Eval also worked closely with the social impact assessment team and EPL to coordinate and present her findings. Initial consultations were held in October 2016 followed by a final visit in January 2017. The report certifies that the Valuer has no present or future interest in the affected properties; that the affected properties have been carefully inspected and that the statements and opinions expressed in the report to the best of the Valuer's knowledge are correct.

6.3 Valuation Method and Rates

6.3.1 Asset (Crop)

As part of the valuation process, the Valuer met with the affected farmers and the farmers' appointed witness/interpreter to discuss their cost of production, expected yields and income for their affected crops. The farmers cannot read or write and although discussions were held in Twi, which all but one of the farmers spoke, a Twi speaking witness/interpreter was required to record the information in the witness the data sheet. The District Extension Desk Officer of MOFA was contacted for production data on the identified crops. Consultations were held with the District Officer and the affected farmers on November 7th, 2016, presenting them with the Ministry's data. Since some of the crops had been previously harvested, enumeration by crop count was not adopted as the method of valuation. Enumeration by the MOFA's crop yield per acre method was adopted. The area of each farmer's crop was thus surveyed for the purpose of determining yields;

The land surveying team established the total land area of the site, had the farmers define the boundaries of their crop areas, took the coordinates of boundaries, plotted and establish each farmer's crop area via land survey. The valuation team then inspected the crops to obtain crop specific data in conformity with the requirements of 'Form F' of the Ghana Lands Valuation Division. Collecting crop specific data entailed identifying dominant crop, interspersed crop (if any), planting densities/voids, and growth stage/age. The farm inspection forms were filled out to include farmer's personal data and were explained to each farmer by

the witness/interpreter. Completed forms were thumb printed by the farmers, and signed by their witness/interpreter and countersigned by the enumerator.

For the project valuation, the established Crops Rates of Lands Valuation Division (LVD) were not relied upon as the rates were compiled in 2014 and information obtained indicated that updated rates were yet to be approved by the LVD board and published for their offices. Instead, the market crop rate per acre data obtained from MOFA was adopted as the basis of the valuation. This data includes crop production cost data obtained from the district office of the MOFA such as the cost of land preparation, seedling cost, planting cost, farm maintenance cost including weeding and watering, application of fertilizer and pesticides, harvesting and harvesting material cost, among other factors. The data provided the yield per acre and selling price of the crops. The cost input for each crop growth stage was analysed and crop rates for the net income for each growth stage determined. The analysed crop rates per acre included in Table 6-1 were multiplied by the relevant crop acreages and the Full Replacement Cost of affected crops estimated.

6.3.2 Asset (Kiosk)

Inspection of structures entailed collating construction details, taking measurements of the kiosks and to-be-reconstructed structures (sheds) and immovable civil improvements including mass concrete paved areas. Data collected include use (business/residence) of structures, years of operation and average monthly incomes from business⁴. In determining supplemental assistance to be provided, the following cost items were covered:

- Assessment of full replacement cost for the kiosk, associated structures, and any other immovable construction works made by the kiosk owners themselves;
- Cost to relocate the structure; and
- Loss of income arising from the disturbance and loss of business for up to 2 months during the transition to a new location.

6.4 Compensation

6.4.1 Asset (Crop)

In general terms, the compensation due the affected farmers will comprise:

- Cash payment for annual value of crops for 1 year;
- Cash payment to move their materials;
- Cash payment of the equivalent of 2 months income loss from crops;
- Supplementary assistance consisting of a one-time cash payment of 15 percent of the annual income from crops as a transition/disturbance cost; and
- Supplementary assistance consisting of a one-time cash payment of 10 percent of the annual income from crops for vulnerable farmers.

⁴ Per the valuation report, general valuation practice in Ghana does not taken into account alternative locations of business or other sources of income.

The crop rates used for this valuation are presented below in Table 6-1, followed by the compensation value estimated for each PAP in Table 6-2.

Table 6-1: Full Replacement Cost Rates for Crops (MOFA District Office data)

Crop	Seedling	Medium	Matured
	Crop Rate per Acre (GH¢)		
Onions	2,481.12	3,968.64	5,212.86
Green Pepper	2,506.24	3,980.01	5,232.52
Okro	2,099.72	2,971.48	3,793.01
Ayoyo	2,413.11	3,582.14	4,568.93

In some instances, due to the need for the project to access some areas of the site early for the site investigation, some crops were harvested by the farmers prior to reaching maturity and sold at the local market. In these cases, as the farmers received a reduced income for the crop sales, an additional payment for harvested crops of 30% of the mature crop value has been added. For ayoyo which is continuously harvested and would normally continue to produce yield, an additional 40% was added to the above mature crop rate to cover subsequent harvests.

Table 6-2: Crop Valuation estimate by farmer for plots within the Project Area

PAP No	PAP	Size of Affected Farm (Acres)	Crop Data	MOFA Crop Rate Utilised	Total Crop Value in Ghana Cedis	Total Crop Value per the MOFA Rates in USD*
F1	██████	0.84 acres	Mono-crop. Green pepper Seedling stage	2,506.24	2,105.24	478.06
F2	██████	0.027 acres	Okro plants (medium)	2,971.48	80.23	700.72
		0.413 acres	Green pepper (matured)	5,232.52	2161.03	
		0.54 acres	Onions (matured, harvesting just commenced)	1,563.85**	844.48	
					= 3,085.74	
F3	██████	0.78 acres	Mono-crop - onions (harvested)	1,563.85**	1,219.81	277
F4	██████	1.01 acres	Onions (matured, harvesting on-going)	1,563.85**	1579.50	838.01
		0.33 acres	Ayoyo (matured, but continuous harvest)	6396.5***	2,110.85	
					= 3,690.35	
F5	██████	0.02 acres	Okro (matured)	3,793.01	75.86	17.23

Notes: * Conversion rate 1 Ghana Cedi = 0.23 USD;
 ** 30% of MOFA mature crop value used for crops harvested early.
 *** 40% **added** to (i.e. 140% of) MOFA mature crop value for Ayoyo to cover subsequent harvests.

Transport Allowance was also considered for each PAP to transport materials such as irrigation tools and PVC pipes from Site - GH¢120.00. Daily transport hiring rate is for a mini truck popularly known as "Abose Okai Macho" for up to two trips, depending on distance.⁵. The transport allowance cost is included in the valuation summary breakdown provided in Appendix B.

Farmers F1, F2, F3 and F4 were compensated for transport as they had sufficient materials to require transport. The transport compensation is included in the total compensation amount listed in the table Appendix B.

6.4.2 Asset (Kiosk)

In general, the compensation due the affected kiosks will comprise:

- Cash payment for loss of income for 1-2 months business;
- Cash payment to move their business materials and structures;

⁵ Transport based upon current 2017 Market Rate

- Supplementary assistance consisting of a one-time cash payment of 15 percent of the annual income from crops as a transition/disturbance cost; and,
- Supplementary assistance consisting of a one-time cash payment of 10 percent of the annual income from crops for vulnerable farmers.

And for kiosk owners residing in their kiosks:

- Rent paid directly to local landowners to secure 3 years tenancy in a nearby property; and,
- Cost of an agent to find and secure viable rental property.

Table 6-3 includes the valuation estimates for the kiosks. In determining compensation values, the following cost items were covered:

- Day Hiring Charge for a large 4cm truck within the city of Tema at ₵400.00, note; number of trip limited to 2 trips depending on distance⁶;
- Cost of demolition, packing and full replacement cost for reconstructing sheds ₵32.00 to ₵43.00/sq.m;
- Full replacement cost of mass concrete floors at ₵30.00/sq.m; and
- Loss of Business Income for a transition period of 2 months (businesses found in operation during the survey).

Table 6-3: Kiosk Valuation Estimates within the Project Area

PAP Number	Owner	Structure Value (Cedis)	Income loss (Cedis)	Transport Support	Total Cedis	Total USD
K1	██████████	N/A [^]	1,200	120	1,320	303.60
K2	██████████	790.13	1,200	600	2,590.13	595.73
K3	██████████	2,095.23	1,800	600	4,495.23	1,033.90
K4	██████████	4,024.31	N/A [~]	1200	5,224.31	1,201.59
K5	██████████	2,029.97	1,200	200	3,429.97	788.89

Notes: * Conversion rate 1 Cedi = 0.23 USD

[^] This kiosk does not require reconstruction and can be easily transported and re-established as is.

[~] Kiosk not currently operational.

6.5 Compensation Payment Procedures

Following approval of the Final ARAP, it is currently anticipated that Prime Eval and a representative from EPL will meet with the affected parties and complete a Payment Sheet (Payment Voucher) with each PAP and disburse the agreed payments.

⁶ Transport based upon current 2017 Market Rate

7 Resettlement Sites

Kiosk relocation in Ghana is generally conducted informally and standard local practice shows that it is difficult to have much influence over new sites selected for relocation. Thus, it was not considered appropriate for EPL to determine a suitable relocation site for the kiosks that serve as businesses only.

As part of the resettlement process, research was conducted by both the PAPs themselves and on behalf of EPL to determine if any alternative sites were available to relocate the kiosks. Particular attention was given to the kiosks where vendors are currently residing. Two options were considered, a site within Tema New Town that could be purchased on a 99 year lease basis and other 2-3 year rental options. However, suitable relocation site options were identified where the kiosks which contain residents could relocate, reside and keep their current customers. As such, in accordance with standard practice for locating residential properties in Ghana, a land agent will be appointed to help kiosk residents find suitable local rental housing in addition to relocation of their kiosk.

8 Livelihood Restoration and Enhancement

For those vulnerable PAPs living at the project site, the project will provide additional support and a safety net. The project will ensure that the two households affected will be provided with an improved place to live, means of income, access to services and support for welfare of members of each household. As discussed in the eligibility matrix (Table 3) additional compensation for residents will be provided in the form of support from a land agent, 3 years rent for relocation to a rental property in the area, and business relocation costs.

8.1 Business and Financial Training

Financial and business management training sessions will be an option for PAPs. The course will focus on helping the PAPs utilise compensation payments appropriately and provide advice on savings. The kiosk owners / farmers will also be offered optional training to help support or expand their businesses. This could include training on leadership skills, financial and business management and savings. Information may also be provided on potential credit facilities and how best to utilise additional credit support to benefit their businesses.

8.2 Gender Support and Considerations

A number of the businesses affected by the project are owned / run by women. As such the livelihoods of women and their equal support and training in business and financial training proposed above will help them to succeed. Additionally, in terms of project recruitment, the project will implement an equal opportunities employment policy in line with IFC PS 2 and encouragement will be given to training and take up of jobs on the project which have traditionally been perceived as male roles e.g. construction work, truck driving.

9 Stakeholder Engagement

9.1 Overview

Consultation generally refers to joint discussion between project representatives and the affected population serving as a conduit for transfer of information and sharing of ideas. Effective resettlement planning requires regular consultation and engagement with a wide range of project stakeholders (IFC, 2012). In the context of physical and economic displacement, stakeholder engagement includes both the information exchange (dissemination and consultation), and collaborative forms of decision-making and participation.

Stakeholder engagement is an ongoing process throughout resettlement planning and implementation, not a one off event. The level of information which is disseminated or the issues on which consultation takes place vary with the project progress and resettlement activities. In consideration of this, EPL has established a Stakeholder Engagement Plan (SEP) for the project, which includes stakeholder consultation, disclosure activities and engagement exercises.

9.2 Consultation with the Affected Community

During the ESHIA Scoping Phase, it was determined that, given the distance to the nearest community areas and minimal potential for direct impacts on these areas and in order to be sensitive to potential to unnecessarily raise community expectations, targeted focus groups with community representatives and individual meetings with nearby commercial business stakeholders would be conducted rather than a formal public consultation meeting.

General consultation for the project was conducted throughout 2015-early 2017. In September 2015, focus groups were held with representatives of the following communities:

- Tema Manhean Community (Tema New Town) (over 2km south of the power plant site);
- Kpone- Katamanso (over 2km east of the power plant site); and,
- The metropolitan area of Tema, to the west of harbour road and west of the LPG pipeline. This focus group meetings covered the communities 4, 9 and 7.

In addition, individual meetings were held with various stakeholders including the Environmental Protection Authority, Volta River Authority, TOR, Ghana Water Company, Electricity Company of Ghana, Tema East Sub Metropolitan Assembly, Tema Steel, Town and Country Planning Development, Tema Fuel Company, Ministry of Power, Tema Metropolitan Assembly, Sentuo Steel Company, Sunon Asogli Power (Ghana) Ltd., Trojan Power Limited, Cenpower Generation Company, Kpone Independent Power Producer, Energy Commission, and the Volta Aluminium Company Limited.

One-to-one interviews with the PAPs were conducted in August 2015, May, June, October and November 2016 and again in January 2017. Interviews with PAPs covered the following:

- A consultative meeting was held with the kiosk owners regarding the implications of relocation and initial discussion around compensation;

- The kiosks and farmers were surveyed as part of the socio-economic baseline stage in 2015;
- Consultations and an initial asset inventory survey as part of the initial ARAP process in August 2015;
- Two follow-up meetings during the ARAP process in May and June 2016 to finalise the socioeconomic census survey and to further evaluate resettlement options;
- Two meetings in October and November 2016 and one in January 2017 to complete the crop inventory and valuation, confirm the cut-off date (October 2016), and agree the compensation options;
- Consultation with the MOFA in November 2016; and,
- Consultation meetings with the EPA and PAPs to review the draft ARAP in March 2017.

Stakeholder and community engagement activities will also continue throughout the construction and operation phases of the project guided by the SEP so that all concerns identified to date are managed and factored into the project design or implementation activities as appropriate. On-going stakeholder engagement for the project will be conducted in accordance with the requirements of IFC PS1, “Assessment and Management of Environmental and Social Risks and Impacts”.

9.3 Consultation on the ARAP

In accordance with the AfDB and IFC policies (“Involuntary Resettlement Policy” and “Land Acquisition and Involuntary Resettlement” respectively), consultation on the ARAP has consisted of the following steps in addition to the preparatory and data collection consultation activities detailed above:

- Circulation of the draft ARAP document for comments to all relevant institutions Environmental Protection Agency, TDC, TMA, and surrounding businesses;
- Presentation of the findings of the draft ARAP to the affected communities; and,
- Communication of comments on the ARAP for incorporation into the final ARAP.

10 Institutional Arrangements

10.1 Proposed Compensation

Appendix B presents the proposed compensation plan for each PAP including all components.

10.2 Compensation Payment Procedure

Prior to disbursement of compensation, each eligible PAP will sign a compensation certificate which sets out the mutual commitments for each party. The format of the certificates will be easily understandable to affected people. This will be countersigned by Prime Eval, and representative of the EPL. This compensation plan includes commitments as follows:

- EPL to pay the agreed compensation prior to economic displacement, and farming is to be discontinued as of March 15, 2017;

- EPL shall pay the landlords directly on an annual basis for three years the cost of a year lease for each tenant;
- PAP to vacate the affected land including harvesting crops prior to vacating by March 15, 2017; and,
- Both parties to abide by the requirements of the ARAP.

Following agreement and signing of the certificates, compensation will be disbursed and the PAPs will be requested to vacate the site. Helen Arthur and a representative of EPL will be responsible for ensuring receipt of the financial compensation. Vacation of the site will be carried out by the tenants and monitored by EPL and Prime Eval.

10.3 Roles and Responsibilities

Mutual engagement by the PAPs and EPL is essential to the success of the livelihood restoration process, and has been ongoing throughout the ESIA with assistance from suitably qualified and experienced specialists. To support the ongoing community consultation and engagement process, both generally and specifically regarding this ARAP, EPL will appoint a CLO when the construction phase commences. The CLO role will continue into the operational phase. However in the event that a CLO is not appointed by the time of ARAP implementation, in the interim, EPL may appoint a designated party to assist with this consultation. Full details of the wider roles and responsibilities for community engagement will be set out in the project's SEP. Key roles and responsibilities with regards to the ARAP are set out in Table 10-1.

Table 10-1: Roles and Responsibilities in the Livelihood Restoration Process

Stakeholder / institution	Interest	Roles / responsibilities	Time-scale for action
PAPs (farmers and kiosk owners)	Economic activity on site or pipeline route	<ul style="list-style-type: none"> Engage with socio-economic surveys Engage in consultation process Vacate project site as agreed on compensation certificate 	<p>Complete</p> <p>Ongoing</p> <p>Farming and business activities to cease and relocation activities to commence at site vacation.</p>
EPL	Project developer	<ul style="list-style-type: none"> Engage appropriate organisations / individuals to develop and implement the ARAP Facilitate good communications and relations with the PAPs Respond to feedback and grievances in a timely manner 	<p>Complete</p> <p>Ongoing</p> <p>Ongoing</p>
ARAP Implementation Team – EPL CLO and Prime Eval Consult	Retained by EPL to implement the ARAP	<ul style="list-style-type: none"> Implement ARAP Provide liaison between EPL and PAPs Monitor ARAP, with particular attention to vulnerable persons Identify and provide additional support as required 	Ongoing
Consultant (Jacobs)	Retained by EPL to support the resettlement and livelihood restoration process	<ul style="list-style-type: none"> Undertake detailed socio-economic survey of PAPs Undertake consultation with PAPs Development of this ARAP Annual independent monitoring for 3 years 	<p>August 2015/May 2016 (complete)</p> <p>May 2016 (complete)</p> <p>October 2016 -February 2017 (complete)</p> <p>TBD</p>
EPA and MOFA	MOFA ministries with responsibilities including crop valuation	<ul style="list-style-type: none"> MOFA gave input on crops compensation basis prior to final determination and disbursement of compensation. 	November 2016.

10.4 ARAP Project Team

The ARAP Team consists of the project sponsor (EPL), Prime Eval (valuation specialist), and Jacobs Consultancy and its Ghanaian partner sub-consultants Associated Consultants, responsible for developing the ARAP.

10.5 Community Liaison Officer

The project will appoint a CLO who will be responsible for working with the local communities and PAPs to maintain appropriate relationships, and the implementation of all community-related programmes and policies, including implementation of the ARAP and the livelihood restoration measures proposed.

10.6 PAPs

To facilitate a mutually supportive relationship and to benefit productively from the ARAP implementation, the role of the PAPs is to:

- Cooperate with the survey/valuation team by carefully checking and signing off their affected lands and other assets as well as their entitlements;
- Participate in all phases of ARAP preparation and implementation;
- Provide feedback on improving the quality of the ARAP and suggesting solutions for its effective implementation;
- Channel grievances through appropriate quarters for redress; and,
- Vacate the proposed project PP1 site and (where relevant) move to new sites in a timely manner after receiving full entitlements.

11 Grievance Management and Redress Mechanisms

11.1 Overview

A grievance can be defined as an actual or perceived problem arising from project-related activities that might give grounds for complaint. As a general policy, EPL will work proactively towards preventing grievances through the implementation of impact mitigation measures as identified by the ESIA and through adherence to the steps identified in this ARAP.

Through these activities EPL and its advisors have endeavoured to anticipate and address potential issues before they become grievances. Where unanticipated issues or failures in intended mitigation result in a complaint, a grievance mechanism is required to ensure that concerns are resolved promptly using an understandable and transparent consultative process. Most grievances can be settled with additional explanation efforts and some mediation. EPL will employ the following grievance mechanism process to resolve any potential disputes related to the livelihood restoration process.

11.2 Potential Grievances/Disputes

Anyone will be able to submit a grievance to the project if they believe an activity or practice is having a detrimental impact on the community, the environment or their quality of life. They may also submit comments and suggestions. Grievances could include:

- Unanticipated/mitigated negative impacts on a person or a community (e.g. financial loss, physical harm, nuisance);
- Dangers to health and safety or the environment;
- Failure of EPL, its sub-contractors and their workers or drivers to comply with relevant standards or legal or other obligations including the requirements of the environmental permit or ESMP;
- Harassment of any kind related to project activities;
- Criminal activity;
- Improper conduct or unethical behaviour;
- Financial malpractice, impropriety or fraud; and,
- Attempts to conceal any of the above.

Specific grievances associated with implementation of an ARAP process may include:

- Insufficient notice to vacate the premises;
- Delay of payments;
- Loss of customers;
- Problems with moving arrangements; and,
- Additional transition challenges.

Grievances will be investigated by the EPL CLO to review the validity and responsibility. The CLO will explain in writing (or orally, where literacy is an issue) the manner in which the review was carried out, the results of the review, any changes to activities that will be undertaken to address the grievance, and how the issue is being managed to meet the relevant environmental and social management system and/or legal or other requirements.

If the grievance cannot be resolved internally, EPL will then seek to resolve the grievance through mediation by local authorities or appropriate government bodies, and finally, if a valid resolution cannot be reached, through judicial appeal.

The grievance flow chart is provided in Appendix C.

11.3 Confidentiality and Anonymity

The project will aim to protect a person's confidentiality when requested and will guarantee anonymity in annual reporting. Individuals will be asked permission to disclose their identity. Investigations will be undertaken in a manner that is respectful of the aggrieved party and the principle of confidentiality. The aggrieved party will however be made aware of if/when a situation arises where disclosure of identity is required and the project will identify these situations to see whether the aggrieved party wishes to continue with the investigation and resolution activities.

11.4 Grievance Reporting and Resolution

A formal logging system will be developed and the EPL representative followed by the CLO will be responsible for logging all grievances. A grievance registration form will be produced for those wanting to make a complaint or comment. Provision will be made to do this directly to EPL or the contractor, through the CLO or through a community representative. The procedure for lodging grievance and their resolution will be included in appropriate project communication materials such as a non-technical summary. In the first instance, grievances will be directed to the CLO who will classify grievance according to Table 11-1.

Table 11-1 : Grievance Classification Criteria

Grievance Classification	Risk Level	Validity	Response
Low	None or low	Unsubstantiated	CLO will conduct an investigation, document findings and provide a response.
Medium	Possible risk and likely a one off event	Possible substantiation	CLO and an appropriate investigation team will conduct an investigation and determine the corrective actions to be taken. The CLO will provide a formal response.
High	Probable risk and could reoccur	Probable substantiation	CLO will organise a Major Investigation Team including EPL for prompt investigation and resolution. The CLO will provide a formal response.

The CLO will log the receipt of a comment, formally acknowledge it, track progress on its investigation and resolution, and respond in writing with feedback to the aggrieved party. The CLO will then initiate the investigation and ensure its speedy conclusion aiming to provide a response within ten working days, unless there are exceptional circumstances. If the project receives a large number of unsubstantiated grievances, the process will be reviewed to define instances when no response is needed. For time-sensitive (urgent) grievances, the project will aim to respond within 2 working days.

Where investigations are required, project staff and outside authorities as appropriate will assist with the process. The CLO will collaborate with EPL to identify an appropriate investigation team with the correct skills to review the issue raised and to decide whether it is project related or whether it is more appropriately addressed by a relevant authority outside the project. The investigation will also aim to identify whether the incident leading to the grievance is a singular occurrence or likely to reoccur.

Identifying and implementing activities, procedures, equipment and training to address and prevent reoccurrence will be part of the investigation activities. In some cases it will be appropriate for the CLO to follow up at a later date to see if the person or organisation is satisfied with the resolution or remedial actions. The CLO will summarise grievances to report on project performance weekly during construction and bi-annually during operation, removing identification information as necessary to protect the confidentiality of the complainant and guarantee anonymity except in cases where this is not possible, as described above.

Until the CLO role is established, the points of contact for grievances and comments are:

Name:	Mr Kingsley Asare
Address:	91 Osu Badu Street West Airport Accra Ghana
Email:	kingsley.asare@endeavor-energy.com
Telephone Number:	+233 (0) 55.451.3862

Name:	Maanaa Asiedu
Address:	91 Osu Badu Street West Airport Accra Ghana
Email:	maanaa.asiedu@earlypowerltd.com
Telephone Number:	+233(0)50.139.1341

12 Monitoring and Evaluation

12.1 Monitoring Objectives

Monitoring and evaluation are essential components of the ARAP process. The objective is to provide the EPL with feedback and to identify problems and successes as early as possible to allow for timely adjustment to implementation arrangements as needed. Monitoring and evaluation activities need to be integrated into the overall EPL construction and operational project management process and a comprehensive monitoring plan that identifies the organizational responsibilities, methodology, and the schedule for monitoring and reporting, must be developed to support the ARAP implementation.

The monitoring and evaluation process includes the following objectives:

- Monitoring of specific situations or difficulties arising from the implementation of the ARAP or compliance with its objectives; and,
- Evaluation of the mid- and long-term impacts of the ARAP on affected PAPs' livelihoods, environment, local capacities, on economic development and settlement.

Monitoring aims to correct implementation methods during the course of the project, as required, while evaluation is intended at checking whether the policies and objectives have been complied with and provides lessons learnt for amending strategies in the longer-term.

12.2 Monitoring Indicators

Monitoring will address the following aspects:

- Socioeconomic monitoring: follow-up of the welfare/status of the PAPs, including regular survey of current income and cost of living, re-establishment of livelihoods, household welfare, and other economic activities;
- Grievances and grievance management system including any issues to be resolved; and,
- Assistance in relocation including any unforeseen costs/challenges such as transition or other costs.

The monitoring and evaluation measures put in place are designed to ensure that the implementation of the ARAP is carried out in accordance with good international industry practice including consideration of IFC and AfDB requirements. Measuring progress and impacts related to the aspects described above will be based on the following indicators:

- Livelihood restoration will be measured through a quantitative income or expenditure survey;
- Use of capital will be reviewed via interviews and receipts to determine livelihood sustainability;
- Household welfare will be measured by qualitative interviews with household members; and,
- Qualitative indicators would be used to measure the perception and well-being of PAPs post-relocation.

12.3 Monitoring Process

The EPL representative and/or the EPL CLO will undertake monitoring of ARAP implementation within the first few weeks of relocation. Bi-monthly progress reports will be prepared and submitted to EPL. The monitoring will consider the timeline of the process, outcomes of compensation/livelihood restoration and any other impacts that occur as part of the process. The ARAP implementation schedule is shown in Table 12-1.

Table 12-1 : ARAP Implementation Schedule

TASKS	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8
Completion of Draft ARAP								
Approval of Draft ARAP/Community Consultation								
Payment of Compensation to PAPs								
EPL Site Clearance								
Grievance Mechanisms and Procedures Implemented								
Construction Begins								
Performance Monitoring								
PAP Evaluation (every 6 months for up to 3 years)								

Monitoring will continue at least every 6 months for up to three years and will focus on ensuring that the PAPs are not subject to undue hardship during the transition given that they are all considered to be vulnerable.

12.4 Evaluation Objectives

Evaluation is a key step to ensure that the ARAP process is being completed in line with good practice and the AfDB and IFC standards. The evaluation of the ARAP will have the following specific objectives:

- Assessment of the compliance of the implementation of livelihood restoration activities with objectives and methods as set out in this ARAP;
- Assessment of the compliance of the implementation of the ARAP process with laws, regulations and safeguard policies as stated above;
- Assessment of compensation procedures as they have been implemented;
- Evaluation of the impact of the livelihood restoration programmes on incomes and standard of living, with focus on the requirement that PAPs income are restored or improved; and,
- Identification of actions to take to improve the positive impacts of the programme and mitigate its possible negative impacts, if any.

12.5 Evaluation Process

The CLO will conduct a mid-term evaluation of the ARAP implementation process and compliance with objectives, procedures, policies, laws and regulations.

The ARAP implementation will be evaluated against a number of key performance criteria, which will be identified by the CLO and EPL based on consultation conducted to date with the community. These criteria will likely include access to employment, income, food security livelihood restoration and enterprise, and health and nutrition. The grievance management system will be also be evaluated for its effectiveness. This evaluation will also verify that compensation payments have been made as promised, have been properly processed, and recommendations are being implemented. The schedule for evaluation of ARAP implementation is six months following completion of ARAP implementation. The evaluation process will be repeated each year for 3 years.

13 Estimated ARAP Budget

The estimated ARAP budget is shown in Table 13-1. These costs are indicative and consultant fees will need to be verified.

Table 13-1 : Estimated ARAP budget

Item	Description	COST USD
1	Compensation (assets)	6,374.83
	Residential Relocation (3 years)	2,053.44
2	Transition costs (first year)	775.99
3	Vulnerable Assistance (first year)	408.07
4	Livelihood Restoration Programs and Incidental Costs	1,500
5	Program Development, Management and Grievances	1,500
6	Community Consultation and Engagement	2,000
7	CLO/Consultant fees	5,000
TOTAL		US\$19,612.33

APPENDIX A: VALUATION

1.0 INTRODUCTION

1.1 SOURCE OF INSTRUCTION

By an e-mail dated 21stOctober 2016, Early Power Limited requested for the valuation of affected crop farms situated on their industrial plot of land (referred to as Power Plant Site 1) lying within the Heavy Industrial Area of Tema; acquired for the Ghana Bridge Power Project. The request for valuation was extended to cover temporary structures situated within the route for the project's pipelines.

1.2 PURPOSE OF VALUATION:

The purpose of this valuation is to assess and advise Early Power Limited on:-

- Total Full Replacement Cost payable to the affected farmers for the loss of their crops; and
- Total Relocation and Supplemental Assistance to be provided to owners of temporary structures to be relocated outside the route for the project's pipelines.

1.3 DATE OF INSPECTION

Physical inspection and data collection on the affected farms and temporary structures were undertaken on October 28th, 2016 and additional inspections conducted on October 31st, 2016 and again on November 7th, 2016.

On the days of each inspection, group consultations were held



with the affected farmers to brief them on the processes of the inspection. One-on-one consultations were also held with the owners of temporary structures prior to administering the inspection forms.

1.4 DATE OF VALUATION

Data entry and analysis for the valuation was undertaken on November 4th, 2016. As part of the valuation process, the Valuer met with the affected farmers and the farmers' appointed Witness/Interpreter - Alexis Mohammed Kaditi on November 2nd, 2016 to discuss their cost of production, expected yields and income for their affected crops. The farmers are illiterate and although discussions were held in Twi, which they spoke with the exception of one farmer, it is required that a literate and Twi speaking Witness/Interpreter be present to relay information and record the data in the witness the data sheet. The District Extension Desk Officer of the Ministry of Food and Agriculture (MOFA) was contacted for production data on the identified crops. Consultations were held with the District Officer and the affected farmers on November 7th, 2016, presenting them with the Ministry's data. The valuation date for this assignment is November 10th, 2016.

2.0 THE VALUATION PROCESS

2.1 CONSULTATIONS

2.1.1 CONSULTATIONS WITH CROP FARMERS

Initial consultation was held with one of the farmers, [REDACTED] on the Valuer's first visit to Site 1 with a representative of Early Power Limited. On the inspection day, the farmer was informed to notify persons with crops on the site and four additional farmers were identified and for the purpose of validating their claim as farmers, their crops and farmed boundaries were identified. Consultations held with the farmers focused on:-



- determining how long they have been farming on the site. Two of the farmers had farmed on the site for a period of two years. It was the first season of farming for the others. Although, most of these farmers have not been farming the site on a long-term basis, full compensation was applied in order to be cautious and ensure consistency with best international practice.

- establishing the farmers' right to occupying and farming on the Site. The farmers confirmed that they had no formal or verbal permission for being on the Site;

- establishing the cut-off date. The date of inspection, October 28th, 2016 was established as the cut-off date for non-entry and vacating of the Site. The farmers were duly informed to cease farming on the Site, but that, they are permitted to harvest their crops if not disturbed by the engineering tests and

before civil works commences. Key caution to the farmers was that if additional crops were found on the site whenever civil work commences, no consideration would be given for recompensating them;

- establishing the extent and nature of impact. The extent of impact can be temporary or permanent loss of a partial or complete asset. Full impact is a permanent and complete loss. In this case, farmers are never coming back, a permanent loss and it affects completely their farm area not part of it i.e. total crop loss for fully matured crops as at the date of the valuation. Although the engineering test being conducted on the field would cause partial impact, for the purpose of fair compensation, it was established that impacts to farmer's crops from this project **would be considered full**¹.

Impact was considered to be full as:-

- The three onion farmers had found it necessary and had taken the initiative to harvest their matured crops, which for them, ideally were due for harvesting within few (2-4) weeks. Despite the crop's growth life (on-field life) of 3-4months, this one-off harvest ends their onion farming, effective of the cut-off date; and
- Two of the crops found on the Site, are harvested over months after the first-time harvest, but this is subject to availability of water, which is available from the storm drain near the Site. These crops, Green Pepper and Corchorus Species ("Ayoyo" - a leafy vegetable), once matured, are harvested at

¹Full impact for crops is defined here as total crop loss for the fully matured crops for the October /November 2016 season.

intervals over a fair period (green pepper for months to a year and five months for ayoyo). With the cut-off date established, any potential or subsequent harvest would be considered outside the scope of this valuation and would not be compensated as it exceeds the cut-off date.

Farming activities of these farmers were instructed to cease and therefore, for a fair and adequate compensation, impact was assessed as full impact for the 2016 crop season to be paid on a one time basis.

- establishing the crop enumeration method to adopt. With one onion farm harvested and harvesting on-going for another, and being food crops, enumeration by crop count was not adopted. Enumeration by the MOFA's crop yield per acre method was adopted. The area of farmer's crop was thus surveyed for the purpose of determining yields;

- establishing Crop Rates to be adopted. In a group consultation and with the farmers' witness/interpreter (Alexis Mohammed Kaditi) present, the farmers provided data regarding production cost, expected yields and income. As previously mentioned, production cost, yields and income data² were also obtained from the District Extension Desk Officer of MOFA. Consultations were then held with the farmers, their witness/interpreter and the MOFA officer to discuss the data compiled and establish the basis



²APPENDIX I - DISTRICT MOFA CROP PRODUCTION DATA

for computing Crop Rates to be adopted. The established Crop Rates of the Lands Valuation Division (LVD), the government statutory valuation office were not relied upon for this valuation as the rates were compiled in 2014 and information obtained indicated that updated rates were yet to be approved by the LVD board and published for their offices.

2.1.2 CONSULTATIONS WITH OWNERS OF TEMPORARY STRUCTURES

One-on-one consultations were held with owners' of temporary structures informing them of the project, and the fact that they would not be allowed to remain on the route of the pipeline. Owners were duly informed of the cost elements for determining supplemental assistance, as noted below in Section 2.3, to be provided to enable them to restore their livelihood and in some cases relocate.

2.2 CROP INSPECTION AND VALUATION

Farm Survey and Crop Data Collection - This involved activities of land surveying and crop valuation. The land surveying team established the total land area of the site, had the farmers define the boundaries of their crop areas, took the coordinates of boundaries, plotted and establish each farmer's crop area³. The Valuation team inspected the crops to obtain crop specific data in conformity with the requirements of Form F of the Lands Valuation Division. Collating crop specific data entailed identifying dominant crop, interspersed crop (if any), planting densities/voids, and growth stage/age. The farm inspection forms were filled out to include farmer's personal data. The farmers' witness/interpreter explained the filled out forms. Completed forms were thumb printed by the farmers, signed by their witness/interpreter - Mohammed Abdallah, and countersigned by the enumerator.

Crop Valuation Method - Property valuation is guided by professional practices and standards; in Ghana, valuations are undertaken in conformity to

³APPENDIX III - SITE PLAN

the practices and standards of the Ghana Institution of Surveyors, of which the Valuer is a professional member.

Valuers are enjoined to assess the cost of compensation at the full replacement cost, thus no account is taken of depreciation, in this instance the state (health) and maintenance conditions of the farm. As previously mentioned, harvesting was in process, therefore for the purpose of this valuation, it was agreed with the farmers that **market crop rate per acre** be adopted as the basis of this valuation.

Crop production cost data obtained from the district office of the MOFA covered land preparation, seedling cost, planting cost, farm maintenance cost including weeding and watering, application of fertilizer and pesticides, harvesting and harvesting material cost, among others. The data provided the yield per acre and farm gate price of the crops. Upon careful study of the data, the cost of farm tools e.g. hoes, cutlass, previously omitted from the data, were collated and added. The cost input for each growth stage was analysed and Crop Rates being the net income for each growth stage determined. The analysed crop rate per acre⁴ obtained was adopted and the Full Replacement Cost of affected crops estimated. As previously mentioned, the onion crops were at various stages of harvest and these are a one-off harvest crop; in determining fair compensation, crops were assessed at matured stage and an adjustment factor of 30% applied to arrive at a fair value as farmers had to take an early decision to harvest their crop. Adjustments were made for the matured "ayoyo" and green pepper, as mentioned, these crops are harvested at intervals over a fair period of time after the first time harvest. Thus, in determining loss of crops for these farmers, the assessment was made to cover loss of subsequent harvest. Note: farmers had been duly informed of the engineering surveys to be conducted on the site and likely impact on crops. Their crops were matured, ready for harvest, although

⁴APPENDIX II - ANALYZED CROP RATES

harvesting would be at a later date e.g. two to three weeks for peak harvest in terms of size of crops, the farmers harvested without hesitating to avoid or minimize impact to their crops, on the understanding that they will be appropriately compensated by Early Power Limited through this valuation process.

Other Valuation Factors

Taking into consideration provision for disturbance ranging from 10% to 20% adopted by the Land Valuation Division and based on professional judgement, the Valuer adopted the following allowances for the farmers and the temporary structures:

- Disturbance provision of 15%;
- Vulnerability Assistance of 10%. This provision was made in line with international standards;
- Transport Allowance (Irrigation tools - PVC pipes) from Site - GH¢120.00.
Note: daily transport hiring rate is for a mini truck popularly known as "Abose Okai Macho" for not more than two trips depending on distance⁵.

2.3 INSPECTION OF TEMPORARY STRUCTURES & ASSESSMENT OF SUPPLEMENTAL ASSISTANCE

Having identified owners of affected temporary structures, their personal and socioeconomic data was obtained. Inspection of structures entailed collating constructional details of structures, taking measurements of the kiosks, to-be-reconstructed structures (sheds) and immovable civil improvements - mass concrete paved areas. Data collected included use (business/residence) of structures, years of operation and average monthly incomes from business. In determining supplemental assistance to be provided, the following cost items were covered:-

⁵Market Hiring Rate

- Day Hiring Charge for a large 4cmt.Truck within the city of Tema at ¢400.00. Note: number of trip limited to 2 trips depending on distance⁶;
- Cost of demolition, packing and full replacement cost for reconstructing sheds ¢32.00 to ¢43.00/sq.m;
- Full replacement cost of mass concrete floors at ¢30.00/sq.m;
- Loss of Business Income for a transition period of 2months (for businesses found in operation during the survey);
- Disturbance Provision at 15% (for businesses in operation);
- Vulnerability Allowance of 10%. This provision was made in line with international standards.

Assessment of full replacement cost (as if new) does not take into consideration provision for depreciation (deductions). In general valuation practice in Ghana, compensation valuations does not taken into account alternative locations or source of incomes. Basis for assessing compensation is the loss arising from the disturbance and does not take into account that owner has alternative sources of income e.g. [REDACTED] Loss of income values for each kiosk was calculated based on information provided by the kiosk owners themselves on their monthly incomes (400-1,200cedis).

⁶Market Hiring Rates.

3.0 AFFECTED PROPERTY DATA

3.1 AFFECTED PERSONS

Total project affected persons are **eleven affected properties** as detailed below:-

- Five Crop Farmers within Site 1; and
- Six Temporary Structure Owners with structures situated within the route of the project pipeline.

In finalizing the report, the valuation team on January 16, 2017 conducted a final inspection to confirm the following being part of comments on the draft report. The final inspection was to:-

- Attempt to verify the identification of the owner of the shed who was unavailable at the time of the original valuation inspections; and

Final Findings:-

- The owner of the previously unoccupied kiosk was not present. However, the kiosk was in operation as a new person had been requested to provide services by the adjacent business (Quantum). Given that the occupant has begun business recently, and given that development of the pipeline is likely to be some months away, further discussions will be held regarding relocation of this kiosk and details will be finalised at a later date, but prior to commencement of construction of the pipeline route.

3.2 CROP FARMERS DATA⁷

LOCATION	NAME	SIZE OF AFFECTED FARM	CROP DATA
Site 1	██████████	0.84acre	Mono-crop - green pepper. Seedling stage
Site 1	██████████	0.98acre	Mixed-crop - onions (matured), green pepper (matured) and 27 okro plants (medium)
Site 1	██████████	0.78acre	Mono-crop - onions (harvested)
Site 1	██████████	1.34acres	Mixed crop - onions (harvesting on-going), ayoyo (matured)
Site 1	██████████	0.02acre	Okro - matured

3.3 OWNERS - KIOSKS⁸

NAME	BRIEF DATA
██████████	<p>Use/Business - chop bar, provisions and over-the week residence.</p> <p>Structures - kiosk, shed, table-top structure, bath house (layers of blocks). Civil improvement - mass concrete paved grounds.</p> <p>Business in operation. Monthly Income = GH¢900.00</p> <p>Business name - Psalm 23 Food Joint (No Lie)</p>
██████████	<p>Use/Business - evidence of sale of ice water</p> <p>Structures - shed, metal framed cage- storage, table and bench</p> <p>Business not in operation</p>
██████████	<p>Use/Business - Provisions, Sale of live fowls, Mobile-Money Transfer, Food Vendor.</p> <p>Structures - shed (2 no.), kiosk (2 no.), table-top structure, fowl coup</p> <p>Business in operation.</p> <p>During the structural evaluation, it was noted that it appeared unlikely to the valuer that ██████████ and his family are in fact residing in the kiosk. However, in order to be cautious and ensure that international best practice is applied, compensation consistent with residential displacement is</p>

⁷APPENDIX IV - INSPECTION FORMS (CROP INSPECTION FORM F)

⁸APPENDIX V - INSPECTION FORMS

	<p>being applied.</p> <p>Monthly Income = GH¢600.00</p> <p>Business name - Last Market Ventures</p>
██████████	<p>Use/Business - lotto agent</p> <p>Structure - national lotto kiosk (typical double-cubicle lotto kiosk).</p> <p>Business in operation.</p> <p>Monthly Income = GH¢600.00.</p>
██████████	<p>Use/Business - chop bar/food vendor</p> <p>Structure - purpose built shed, timber framed box-storage</p> <p>Business in operation</p> <p>Business name - Victoria Bless)</p> <p>Monthly Income - GH¢200.00 Monthly Income to 2 workers - GH¢200.00 each Total: GH¢600.00</p>
██████████	<p>Use/Business - concrete products manufacturing</p> <p>Structure - shed</p> <p>Ground civil Improvements - paved areas - pre-cast concrete paving blocks area and mass concrete paved area.</p> <p>Pre-cast Concrete Products on site - 10 drain culverts, 26 floor slabs, 24 road kerbs, 180 honey-comb blocks, 60 paving blocks, and heap of quarry dust (7-8 cubic ton). It should be noted that the concrete floor was noted as being severely degraded during the valuation. However, in order to be cautious and ensure that international bet practice is applied, compensation consistent with the full value of the resource is being applied.</p> <p>Business not in operation. Note: no provision for disturbance and loss of income.</p> <p>Business name - Wonderful Block &Pavers</p>

4.0 CERTIFICATION

Date of Valuation - NOVEMBER 10TH, 2016

Name of Valuer: - HELEN ARTHUR (MRS)

Name of Firm - PRImEVAL CONSULT LTD

Professional Membership: GHANA INSTITUTION OF SURVEYORS

Membership No.: - No. 608

Corporate Membership No.: No. 069

The Valuer hereby certifies that the affected properties described herein have been assessed for their **Full Replacement Cost and Supplemental Assistance** and that:

1. The Valuer has no present or future interest in the affected properties;
2. The affected properties have been carefully inspected and described herein and all findings, statements and opinions expressed in this report to the best of the Valuer's knowledge are correct.
3. This Valuation Report has been made in conformity with the professional standards of the Ghana Institution of Surveyors and of the undersigned is a registered Member and the firm is a Corporate Member.

5.0 VALUATION LIST

NAME	ESTIMATED CASH	ESTIMATED CASH
	COMPENSATION/ SUPPLEMENTAL AMOUNT (¢)	COMPENSATION/ SUPPLEMENTAL AMOUNT (US\$)
████████████████████	¢2,781.56	\$639.76
████████████████████	¢4,007.18	\$921.65
████████████████████	¢1,674.76	\$385.20
████████████████████	¢4,762.93	\$1,095.47
████████████████████	¢94.83	\$21.81
████████████████████	¢10,083.04	\$2,319.10
████████████████████	¢1,520.77	\$349.78
████████████████████	¢7,701.66	\$1,771.38
████████████████████	¢1,518.00	\$349.14
████████████████████	¢3,944.46	\$907.23
████████████████████	¢5,224.31	\$1,201.59
TOTAL ESTIMATED AMOUNT (GH¢)	¢43,313.50	\$9,962.10

Average Interbank Exchange Rate as at February 14, 2017 US\$0.23 = ¢1.00

Payment Sheets (Payment Voucher) designed for the purpose of disbursement/payments shall be submitted with the Final Report, upon approval and acceptance of the recommended compensation amount stated in the Draft Final Report. This sheet presents photo of affected person, breakdown details of compensation amount, sections for thump printing and signing.

VALUATION - TEMPORARY STRUCTURES ALONG PIPELINE ROUTE

STRUCTURE	SIZE	REPLACEMENT COST	TRAVEL & TRANSPORT ALLOWANCE	FULL REPLACEMENT COST
Mass concrete Floor	47.35	1,420.50		1,420.50
Demolish & Reconstruct Shed	17.85	674.73		674.73
T&T Provision for kiosk, table top & blocks	1.50		600.00	600.00
SUB-TOTAL				2,695.23
Provision for Loss of Income (mth)	2		1,800.00	1,800.00
SUB-TOTAL				4,495.23
DISTURBANCE @ 15%			674.28	
VULNERABILITY @ 10%			449.52	
SUB-TOTAL				5,619.04
Provision for Residential Unit - 3years rent @ inclusive of Agent's Fees			4,464.00	
TOTAL COMPENSATION AMOUNT (GH¢)				10,083.04

STRUCTURE	SIZE	REPLACEMENT COST	TRAVEL & TRANSPORT ALLOWANCE	FULL REPLACEMENT COST
Mass concrete Floor	23.01	25.00		575.25
Demolish & Reconstruct Shed	23.01	32.40		745.52
T&T Provision for carting shed	1		200.00	200.00
SUB-TOTAL				1,520.77
Provision for Loss of Income (mth)	2	-	-	-
SUB-TOTAL				1,520.77
DISTURBANCE @ 15%			-	
VULNERABILITY @ 10%			-	
TOTAL COMPENSATION AMOUNT (GH¢)				1,520.77

STRUCTURE	SIZE	REPLACEMENT COST	TRAVEL & TRANSPORT ALLOWANCE	FULL REPLACEMENT COST
Demolish & Reconstruct Shed (Eating Area)	15.64	591.19		591.19
Demolish & Reconstruct Shed (Cooking Area)	6.14	198.94		198.94
T&T Provision	1.50		600.00	600.00
SUB-TOTAL				1,390.13
Provision for Loss of Income (mth)	2		1,200.00	
SUB-TOTAL				2,590.13
DISTURBANCE @ 15%			388.52	
VULNERABILITY @ 10%			259.01	
SUB-TOTAL				3,237.66
Provision for Residential Unit - 3years rent @ inclusive of Agent's Fees			4,464.00	
TOTAL COMPENSATION AMOUNT (GH¢)				7,701.66

NOTE: Provision for loss of income and disturbance was not included as business was not in operation

STRUCTURE	SIZE	REPLACEMENT COST	TRAVEL & TRANSPORT ALLOWANCE	FULL REPLACEMENT COST
T&T Provision	1		120.00	120.00
SUB-TOTAL				120.00
Provision for Loss of Income (mth)	1		1,200.00	
SUB-TOTAL				1,320.00
DISTURBANCE @ 15%			198.00	
VULNERABILITY @ 10%			-	
TOTAL COMPENSATION AMOUNT (GH¢)				1,518.00

NOTE: Provision for loss of income was based on a month's income, as National Lottery agents are permitted to locate their kiosks along roads, thus easy access in relocating

STRUCTURE	SIZE	REPLACEMENT COST	TRAVEL & TRANSPORT ALLOWANCE	FULL REPLACEMENT COST
Demolish & Reconstruct Shed	27.74	1,198.37		1,198.37
Mass concrete Floor	27.72	831.60		831.60
T&T Provision	1		200.00	200.00
SUB-TOTAL				2,229.97
Provision for Loss of Income (mth)	2		1,200.00	
SUB-TOTAL				3,429.97
DISTURBANCE @ 15%			514.50	
VULNERABILITY @ 10%			-	
TOTAL COMPENSATION AMOUNT (GH¢)				3,944.46

STRUCTURE	SIZE	REPLACEMENT COST	TRAVEL & TRANSPORT ALLOWANCE	FULL REPLACEMENT COST
Demolish & Reconstruct Shed	25.2	952.56		952.56
Mass concrete Floor	122.87	3,071.75		3,071.75
T&T Provision	3		1,200.00	1,200.00
SUB-TOTAL				5,224.31
Provision for Loss of Income (mth)	0		-	
SUB-TOTAL				5,224.31
DISTURBANCE @ 15%			-	
VULNERABILITY @ 10%			-	
TOTAL COMPENSATION AMOUNT (GH¢)				5,224.31

NOTE: Provision for loss of income and disturbance was not included as business was not in operation

VALUATION - CROP COMPENSATION

CROP	STAGE	CROP AREA	CROP REPLACEMENT COST	TRANSPORT PROVISION FOR PVC PIPES	SUB-TOTAL	DISTURBANCE ALLOWANCE @ 15%	VULNERABILITY ALLOWANCE @ 10%	FULL COMPENSATION AMOUNT
GREEN PEPPER	SEEDLING	0.84	2,105.25	120.00	2,225.25	333.79	222.52	2,781.56

CROP	STAGE	CROP AREA	FULL REPLACEMENT COST	TRANSPORT PROVISION FOR PVC PIPES	SUB-TOTAL	DISTURBANCE ALLOWANCE @ 15%	VULNERABILITY ALLOWANCE @ 10%	FULL COMPENSATION AMOUNT
GREEN PEPPER	MATURED	0.413	2,161.03	120.00	3,205.74	480.86	320.57	4,007.18
ONIONS	MATURED (harvesting just commenced)	0.54	844.48					
OKRO	MEDIUM	0.027	80.23					

CROP	STAGE	CROP AREA	FULL REPLACEMENT COST	TRANSPORT PROVISION FOR PVC PIPES	SUB-TOTAL	DISTURBANCE ALLOWANCE @ 15%	VULNERABILITY ALLOWANCE @ 10%	FULL COMPENSATION AMOUNT
ONIONS	MATURED (harvested)	0.78	1,219.81	120.00	1,339.81	200.97	133.98	1,674.76

CROP	STAGE	CROP AREA	FULL REPLACEMENT COST	TRANSPORT PROVISION FOR PVC PIPES	SUB-TOTAL	DISTURBANCE ALLOWANCE @ 15%	VULNERABILITY ALLOWANCE @ 10%	FULL COMPENSATION AMOUNT
ONIONS	MATURED (harvesting on-going)	1.01	1,579.50	120.00	3,810.34	571.55	381.03	4,762.93
AYOYO	MATURED (continuous harvest over a period)	0.33	2,110.85					

CROP	STAGE	CROP AREA	FULL REPLACEMENT COST	TRANSPORT PROVISION FOR PVC PIPES	SUB-TOTAL	DISTURBANCE ALLOWANCE @ 15%	VULNERABILITY ALLOWANCE @ 10%	FULL COMPENSATION AMOUNT
OKRO	MATURED	0.02	75.86	-	75.86	11.38	7.59	94.83

APPENDICES

APPENDIX I - CROP PRODUCTION DATA (MOFA)

 **KPONE-KATAMANSO DISTRICT ASSEMBLY** 
DEPARTMENT OF AGRICULTURE

Post Office Box 33, Kpone-On-Sea. Tel. 0302 874708. Email: agric.kato@gmail.com

My Ref:
Your Ref: Date: 6th November, 2016

TO WHOM IT MAY CONCERN,

PRODUCTION DATA ON SELECTED CROPS

Please, find attached production data per acre of onion, sweet (green) pepper, okro, 'ayoyo' (Corchorus spp.) for your perusal and necessary action.

Thank you.


Ernestina Tetebea Agyiri
(District Director of Agriculture)

cont:

PRODUCTION DATA PER ACRE OF ONION

S/NO	ACTIVITY	INPUTS	QUANTITY	FREQ.	UNIT COST (GHC)	TOTAL COST (GHC)
1	Land Clearing	-Man per day	1	1	150.00	150.00
2	Nursery	Seed and seed treatment.	9 bottles	1	25.00	225.00
		Sowing & nursery management	1	1	100.00	100.00
3	Ploughing	1 st Ploughing	1	1	100.00	100.00
		2 nd Ploughing (harrowing)	1	1	100.00	100.00
4	Planting	Bed Preparation	12 beds per acre	1	15.00	180.00
		Labour per acre	1	1	250.00	250.00
5	Fertilizer application	1 st Application (NPK 15:15:15)	4	1	115.00	460.00
		2 nd Application (Urea)	2	1	105.00	210.00
		Labour Cost acre	1	2	100.00	200.00
6	weeding	1 st Weeding	1	1	200.00	200.00
		2 nd Weeding	1	1	200.00	200.00
7	Insects & Pest Control	Litre per acre of insecticide	1	3	40.00	120.00
		Litre per acre of insecticide	1	2	40.00	80.00
8	Irrigation & farm maintenance	Labour Cost per acre	1	5	50.00	250.00
		Fuel for pumping water	2 gallon	15	17.00	510.00
		Maintenance cost	1	1	100.00	100.00
9	Harvesting & Transportation	Harvesting cost per acre	1	2	200.00	400.00
		Transportation cost per maxi sack	40 Maxi Bags	1	10.00	400.00
	TOTAL COST OF PRODUCTION/ ACRE		40 MAXI BAGS	1	400.00	4,235.00
	EXPECTED REVENUE PER ACRE					16,000.00

Prepared by: 

Albert Kofi Tsikata
(Agric. Extension Agent)

certified by: 

Augustine Brakye
(District Extension Desk Officer)

cont:

PRODUCTION DATA PER ACRE OF GREEN PEPPER

S/NO	ACTIVITY	INPUTS	QUANTITY	FREQ.	UNIT COST (GH¢)	TOTAL COST (GH¢)
1	Land Clearance	-Man per day	1	1	150.00	150.00
2	Nursery	-Seed and seed treatment -Sowing & nursery maintenance	2 Bags 1	1	200.00 200.00	400.00 200.00
3	Ploughing	1 st Ploughing 2 nd Ploughing (harrowing) Bed preparation	1 1 12 beds / acre	1 1 1	100.00 100.00 15.00	100.00 100.00 180.00
4	Transplanting	Labour per acre	1	1	150.00	150.00
5	Fertilizer application	1 st Application (NPK 15:15:15) 2 nd Application (Urea) Labour Cost acre	3 1 1	1 1 2	115.00 05.00 100.00	345.00 05.00 200.00
6	weeding	1 st Hoeing 2 nd Hoeing	1 1	1 1	200.00 200.00	200.00 200.00
7	Insects & Pest Control	Litre per acre of insecticide Litre per acre of insecticide Labour Cost per acre	1 1 6	3 3 1	40.00 40.00 50.00	120.00 120.00 300.00
3	Irrigation & Farm maintenance	Fuel for purring water Maintenance cost	1 gallon 1	10 1	22.00 300.00	170.00 300.00
3	Harvesting & Transporter.	Harvesting cost per acre Transportation cost per maxi sack	1 45 Maxi Bags	1 1	500.00 10.00	500.00 450.00
TOTAL COST OF PRODUCTION PER ACRE					350.00	4,290.00
EXPECTED REVENUE PER ACRE					45 MAXI BAGS	15,750.00

Prepared by: 

Albert Kofi Tsikana
(Agric Extension Agent)

Certified by: 

Augustine Bankye
(District Extension Desk Officer)

cont:

PRODUCTION DATA PER ACRE OF OKRO

S/NO	ACTIVITY	INPUTS	QUANTITY	FREQ.	UNIT COST (GH¢)	TOTAL COST (GH¢)
1	Land Clearing	Man per day	1	1	150.00	150.00
2	Nursery	Seed and seed treatment	3 bottles	1	40.00	120.00
		Sowing & nursery management	1	1	100.00	100.00
3	Ploughing	1 st Ploughing	1	1	100.00	100.00
		2 nd Ploughing (harrowing)	1	1	100.00	100.00
4	Planting	Labour per acre	1	1	250.00	250.00
5	Fertilizer application	1 st Application (NPK 15:15:15)	3	1	115.00	450.00
		2 nd Application (Urea)	1	1	105.00	210.00
		Labour Cost acre	1	2	100.00	200.00
6	weeding	1 st Hoing	1	1	200.00	200.00
		2 nd Hoing	1	1	200.00	200.00
7	Insects & Pest Control	litre per acre of insecticide	1	2	40.00	80.00
		litre per acre of insecticide	1	2	40.00	80.00
		labour cost per acre	1	4	50.00	200.00
8	Irrigation & Farm maintenance	Fuel for pumping water	1 Gallon	5	17.00	85.00
		Maintenance cost	1	1	100.00	100.00
9	Harvesting & Transportation	Harvesting cost per acre	1	2	400.00	400.00
		Transportation cost per 100 sack	30 Maxi Bags	1	10.00	300.00
	TOTAL					3,335.00
	EXPECTED REVENUE PER ACRE		40 MAXI BAGS	1	200.00	8,000.00

Prepared by:  certified by: 

Albert Kofi Tsikana
(Agric. Extension Agent)

Augustine Dookye
(District Extension Desk Officer)

cont:

PRODUCTION DATA PER ACRE OF 'AYOYO' (Corehorus spp.)

S/NO	ACTIVITY	INPUTS	QUANTITY	FREQ.	UNIT COST (GHC)	TOTAL COST (GHC)
1	Land Clearing	-Man per day	1	1	150.00	150.00
2	Nursery	-Seed and seed treatment	16 bowls	1	30.00	480.00
		-Sowing & nursery management	1	1	200.00	200.00
3	Ploughing	1 st Ploughing	1	1	100.00	100.00
		2 nd Ploughing (if arrowing)	1	1	100.00	100.00
		Bed Preparation	12 beds / acre	1	15.00	180.00
4	Broadcasting	labour per acre	1	1	150.00	150.00
5	Fertilizer application	1 st Application (NPK 15-15-15)	1	1	115.00	115.00
		2 nd Application (SDA)	2	1	105.00	210.00
		labour Cost acre	1	2	100.00	200.00
6	weeding	Hand picking	1	1	200.00	200.00
7	Insects & Pest Control	Litre per acre of insecticide	1	3	40.00	120.00
		Litre per acre of insecticide	1	3	40.00	120.00
		Labour Cost per acre	1	6	50.00	300.00
8	Irrigation & Farm maintenance	Fuel for pumping water	1.80 ton	10	17.00	170.00
		Ma intenance cost	1	1	200.00	200.00
9	Harvesting & Transportation	Harvesting cost per acre	1	5	100.00	500.00
		Transportation cost per maxi sack	35 Maxi Bags	1	10.00	350.00
TOTAL COST OF PRODUCTION PER ACRE			45 MAXI BAGS	1	200.00	3,675.00
EXPECTED REVENUE PER ACRE						9,000.00

Prepared by: 

Albert Kofi Isikata
(Agric. Extension Agent)

certified by: 

Augustine Doakye
(District Extension Desk Officer)

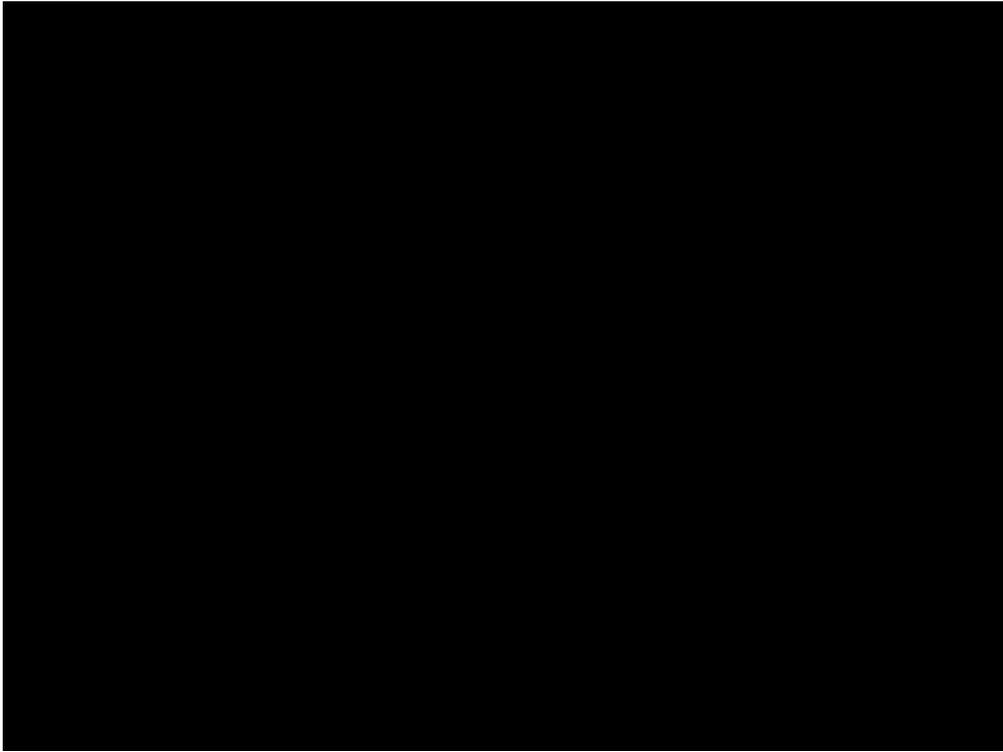
APPENDIX II - ANALYZED CROP DATA (MOFA DISTRICT)
FULL REPLACEMENT COST RATES FOR CROPS

CROP	SEEDLING	MEDIUM	MATURED
	CROP RATE PER ACRE (GH¢)		
ONIONS	2,481.12	3,968.64	5,212.86
GREEN PEPPER	2,506.24	3,980.01	5,232.52
OKRO	2,099.72	2,971.48	3,793.01
AYOYO	2,413.11	3,582.14	4,568.93

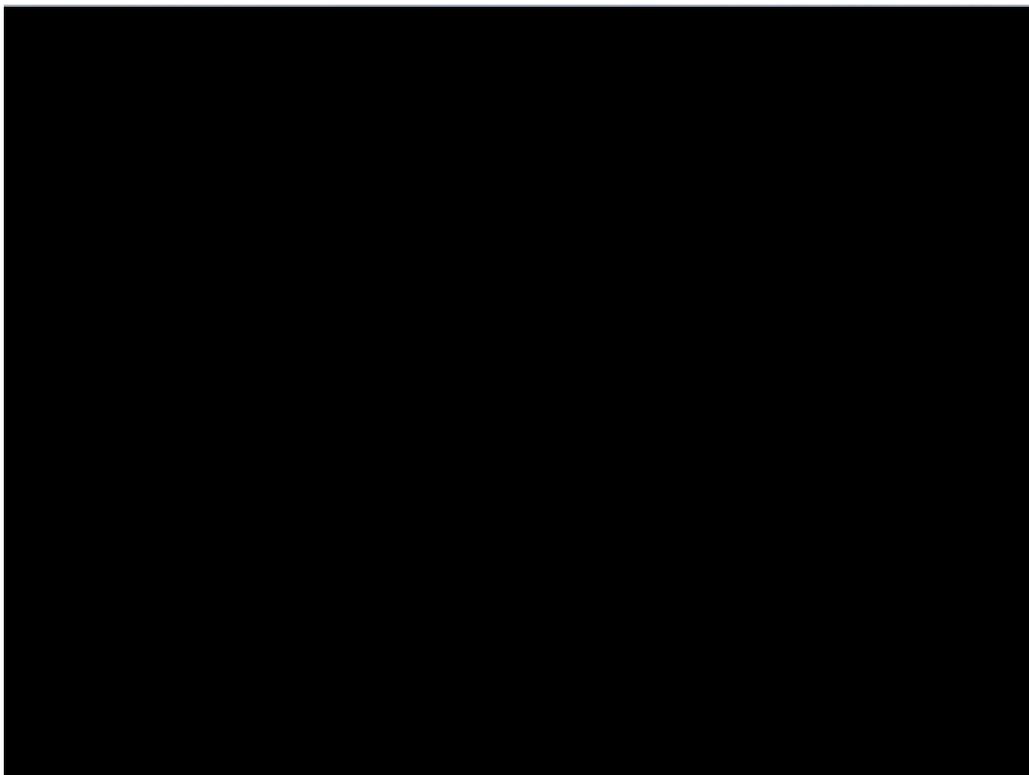
APPENDIX IV - SITE PLAN OF FARMS

APPENDIX V - PHOTOS

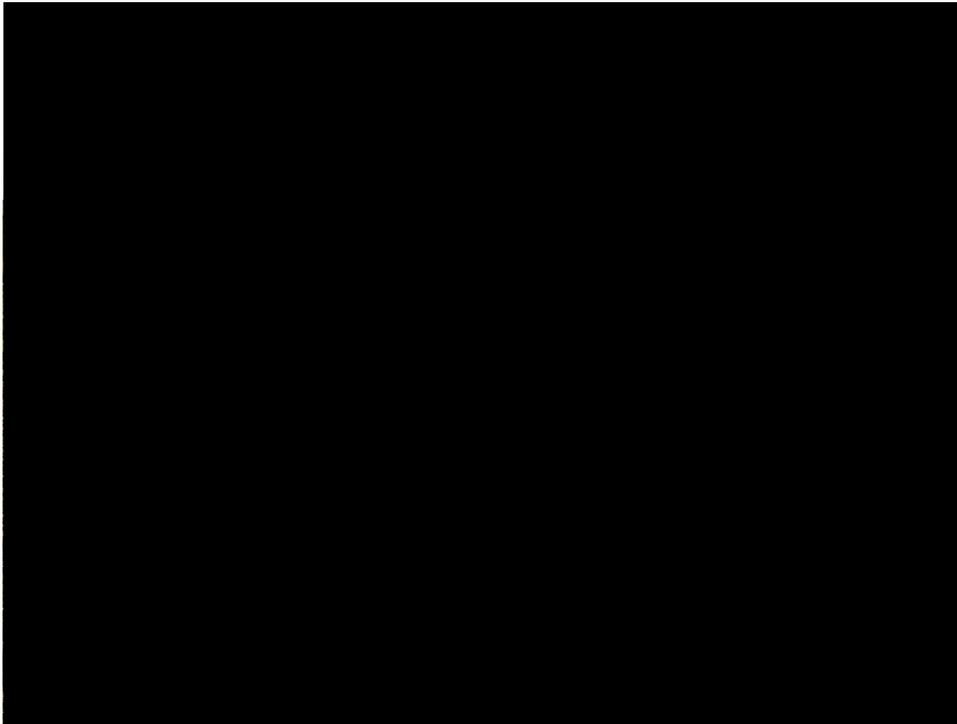
Below: Green pepper at seedling stage



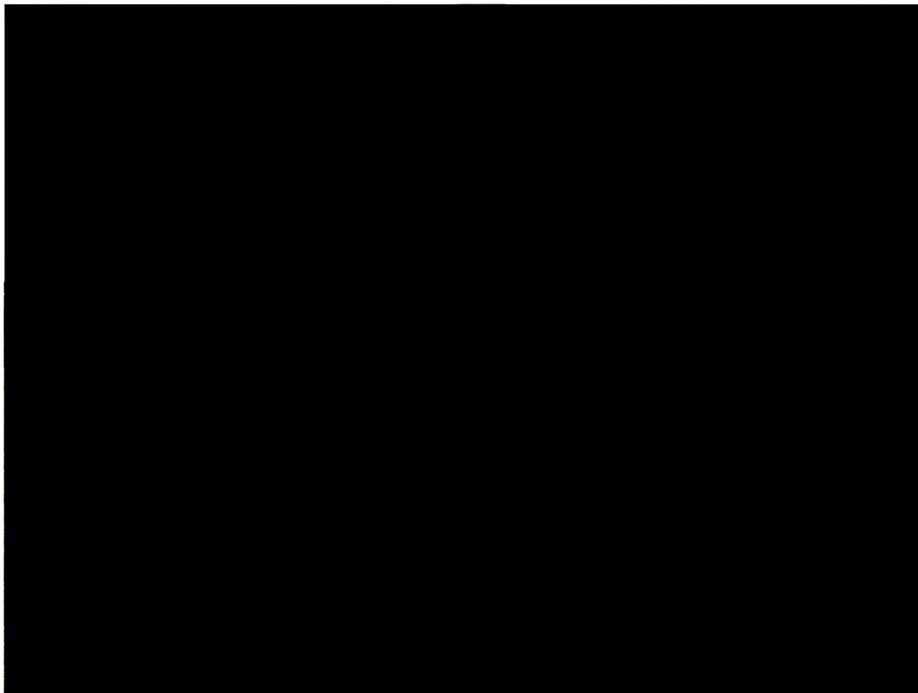
Below: Onion matured and ready for harvesting



Below: Green pepper at matured stage, 1st harvest



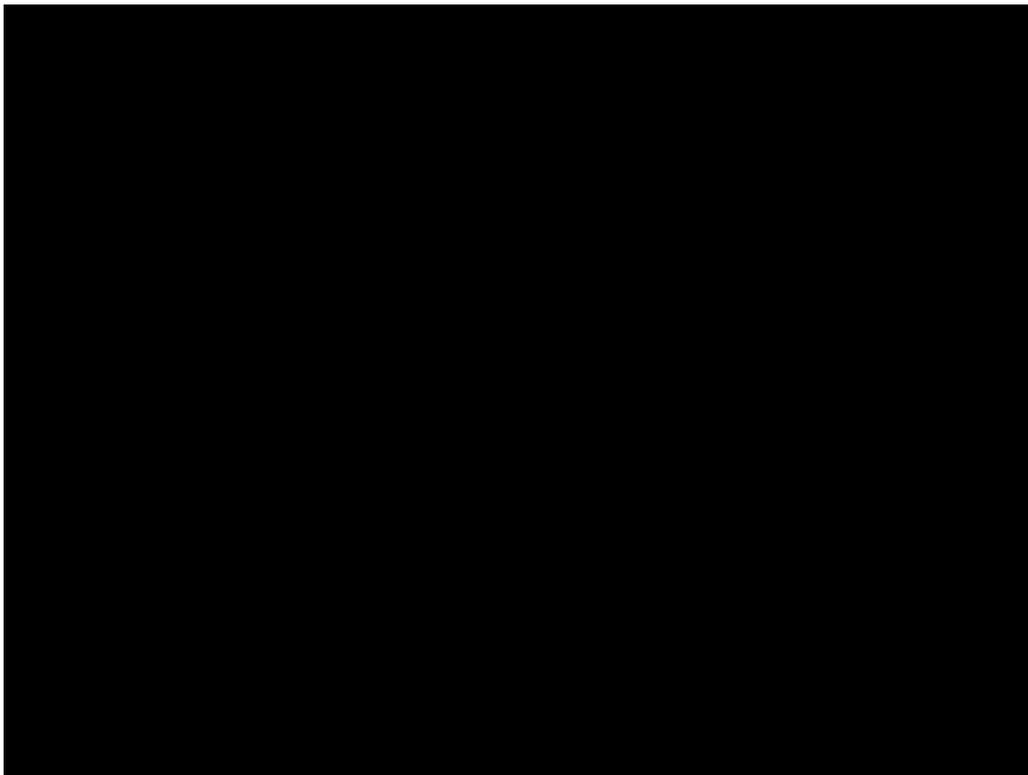
Below: Harvested onion farm



Below: Harvested onions from [REDACTED] Farm



Below: Ayoyo farm



Below: [REDACTED] onion farm, harvesting on-going



Female farmer



below: [REDACTED] okro farm

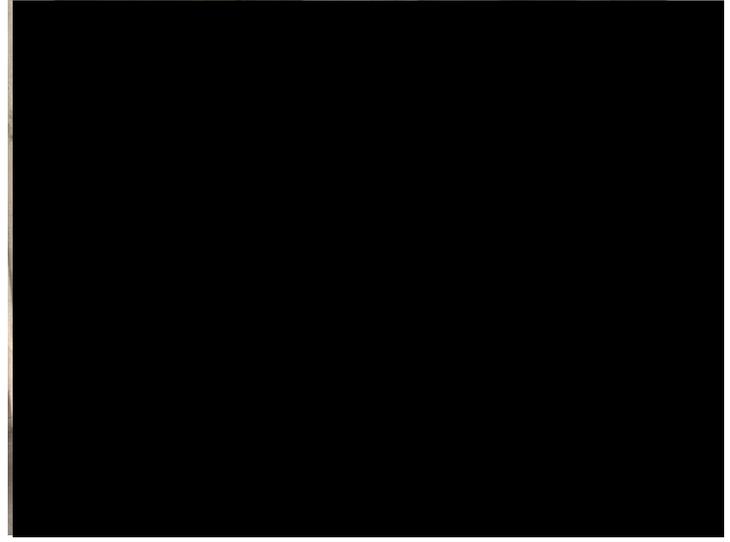
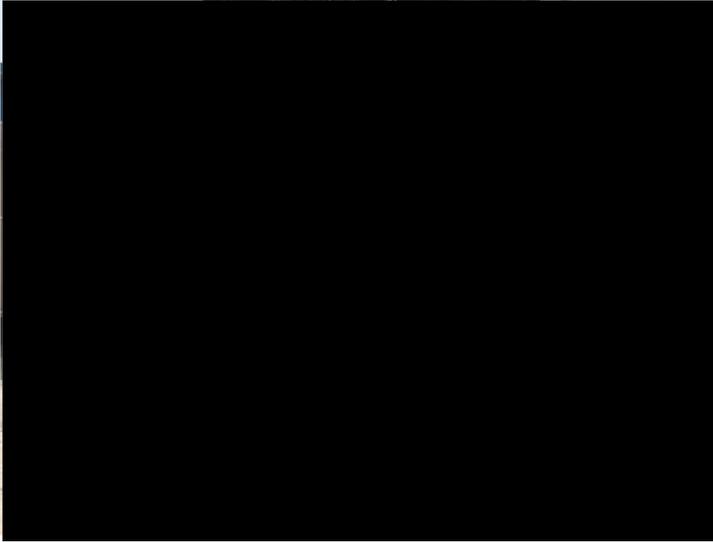


PHOTOS SHOWING FARM ALONG MAIN ROAD IS NOT WITHIN PIPELINE ROUTE

NOTE: Yellow pillars for pipeline route.



PHOTOS OF [REDACTED] STRUCTURES



PHOTOS - [REDACTED]



PHOTOS - JANUARY 16TH and 17th, 2017

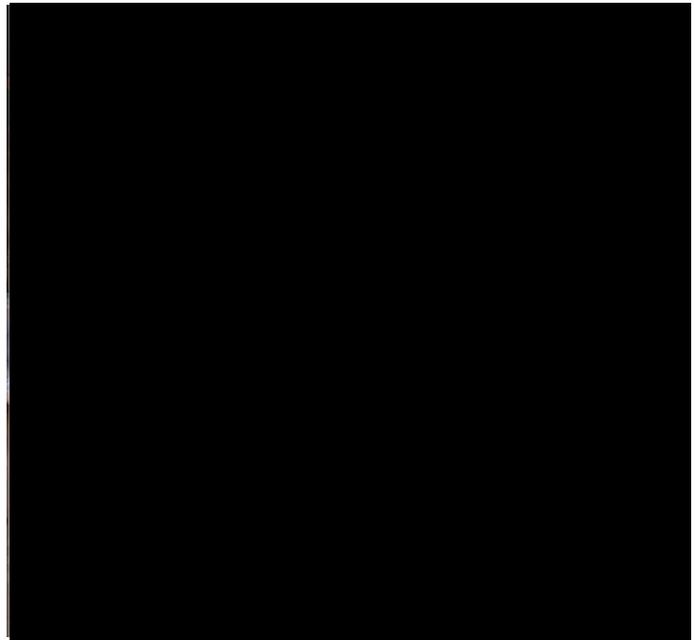
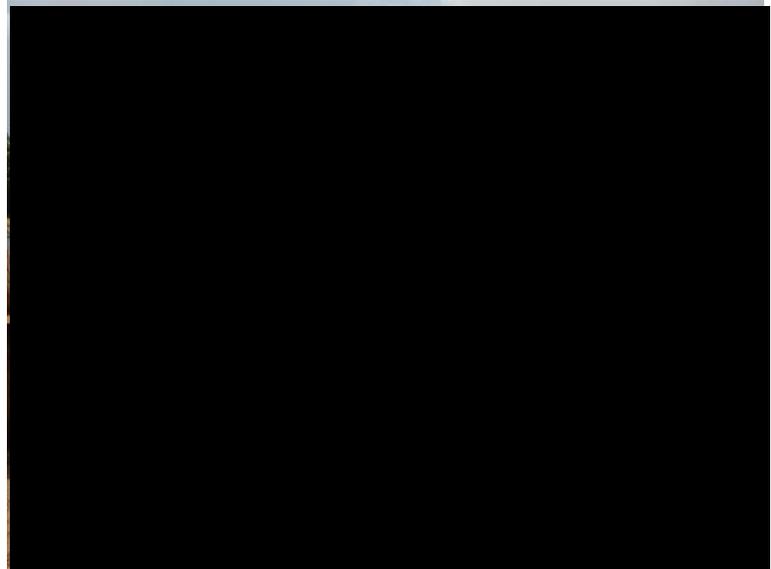
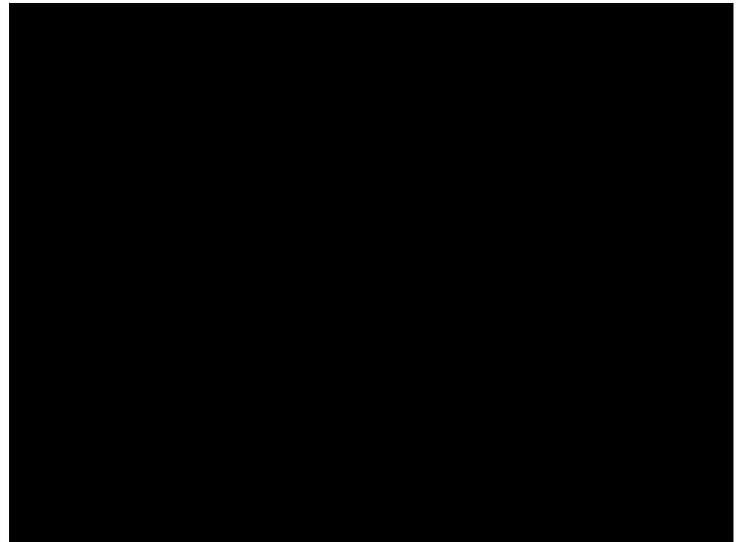
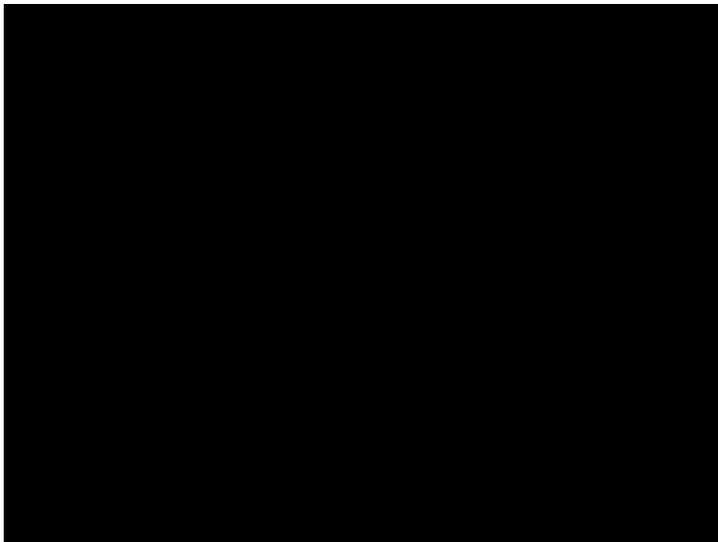


PHOTO OF [REDACTED] STRUCTURES

BELOW: FOWL COUP & MONEY-TRANSFER KIOSK



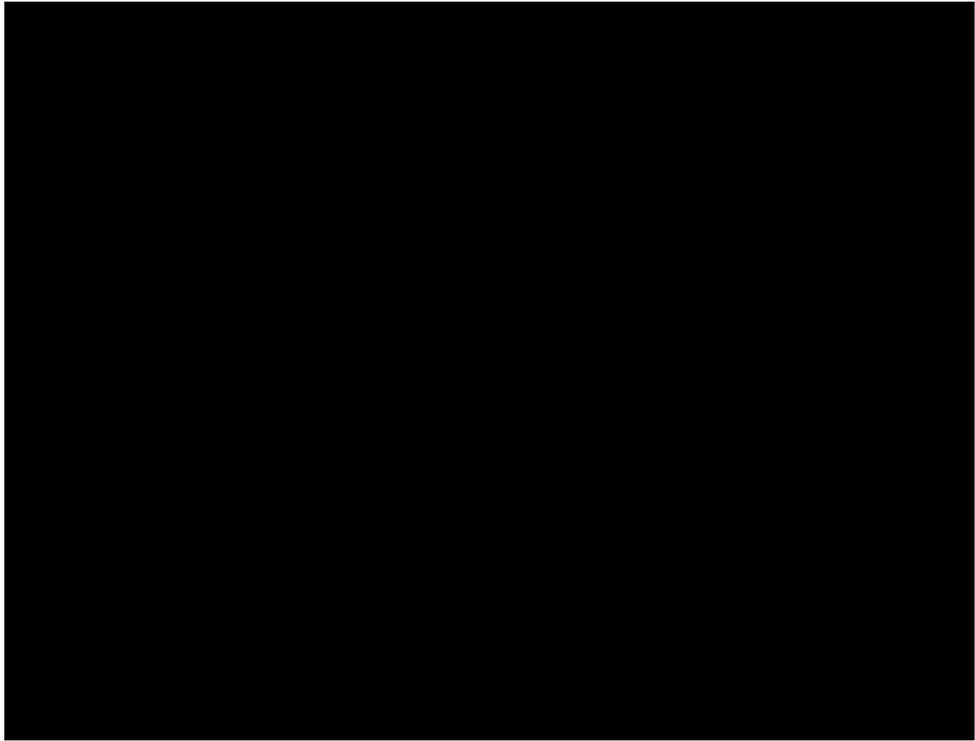
BELOW: PROVISION KIOSK & SHEDS

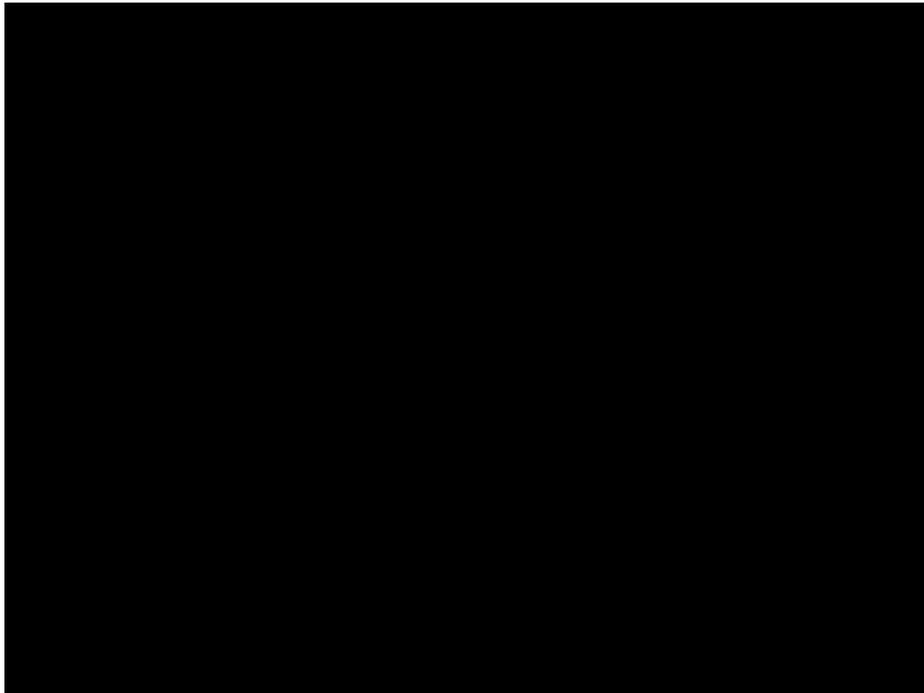


INTERNAL PHOTOS - PROVISION KIOSK



[REDACTED]





- CONCRETE PRODUCTS, SHED & PAVED GROUNDS





APPENDIX B: COMPENSATION SUMMARY TABLE

	Project Affected Person	Total Asset Compensation (Inc. income loss and transport support)	Disturbance/Transition Costs (15% of compensation)	Annual Vulnerability Assistance (10% of compensation)	Provision for Residential Unit Support for 3 years (120 per month plus Agent Fees)	Total (Cedis)	Total USD
F1	██████████	2,225.25	333.79	222.53	-	2,781.56	639.76
F2	██████████	3205.74	480.86	320.57	-	4,007.18	921.65
F3	██████████	1,339.81	200.97	133.98	-	1,674.76	385.20
F4	██████████	3,810.35	571.55	381.04	-	4,762.94	1,095.48
F5	██████████	75.86	11.38	7.59	-	94.83	21.81
K1	██████████ ██████████	1,320	198.00	-	-	1,518.00	349.14
K2	██████████	2,590.13	388.52	259.01	4,464	7,701.66	1,771.38
K3	██████████	4,495.23	674.28	449.52	4,464	10,083.04	2319.10
K4	██████████	5,224.31	-	-	-	5,224.31	1,201.59
K5	██████████	3,429.97	514.50	-	-	3,944.47	907.23

APPENDIX C: GRIEVANCE MECHANISM PROCESS

