



Outage Management System (OMS) Implementation Electricity Company of Ghana (ECG) / Power Distribution Services Ghana Limited (PDS)



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Introduction



Project:

Outage Management System (OMS) Implementation for Electric Company of Ghana Limited (ECG) / Power Distribution Services Ghana Limited (PDS)

Grantor:

Millennium Development Authority (“MiDA”), Ghana

Implementing Entity:

ECG / PDS, Ghana

Compact II Overview

Compact II (Power Compact):

An international treaty between the US Government represented by Millennium Challenge Corporation (MCC) and the Republic of Ghana represented by MiDA to develop the power sector.

Goal

The goal of the Compact is to reduce poverty through economic growth in Ghana

Objectives

- Increase private sector investment, productivity, and profitability of micro, small, medium and large scale businesses;
- Increase employment opportunities for men and women; and
- Raise earning potential from self-employment and improved outcomes for men and women.

Total Program Funds: US\$ 535.6M

Duration: 5 years from EIF

EIF Date: September 6, 2016

Compact Projects & Activities

The Six (6) Compact Projects are divided into two (2) broad areas:

Infrastructure/ Foundational Projects:

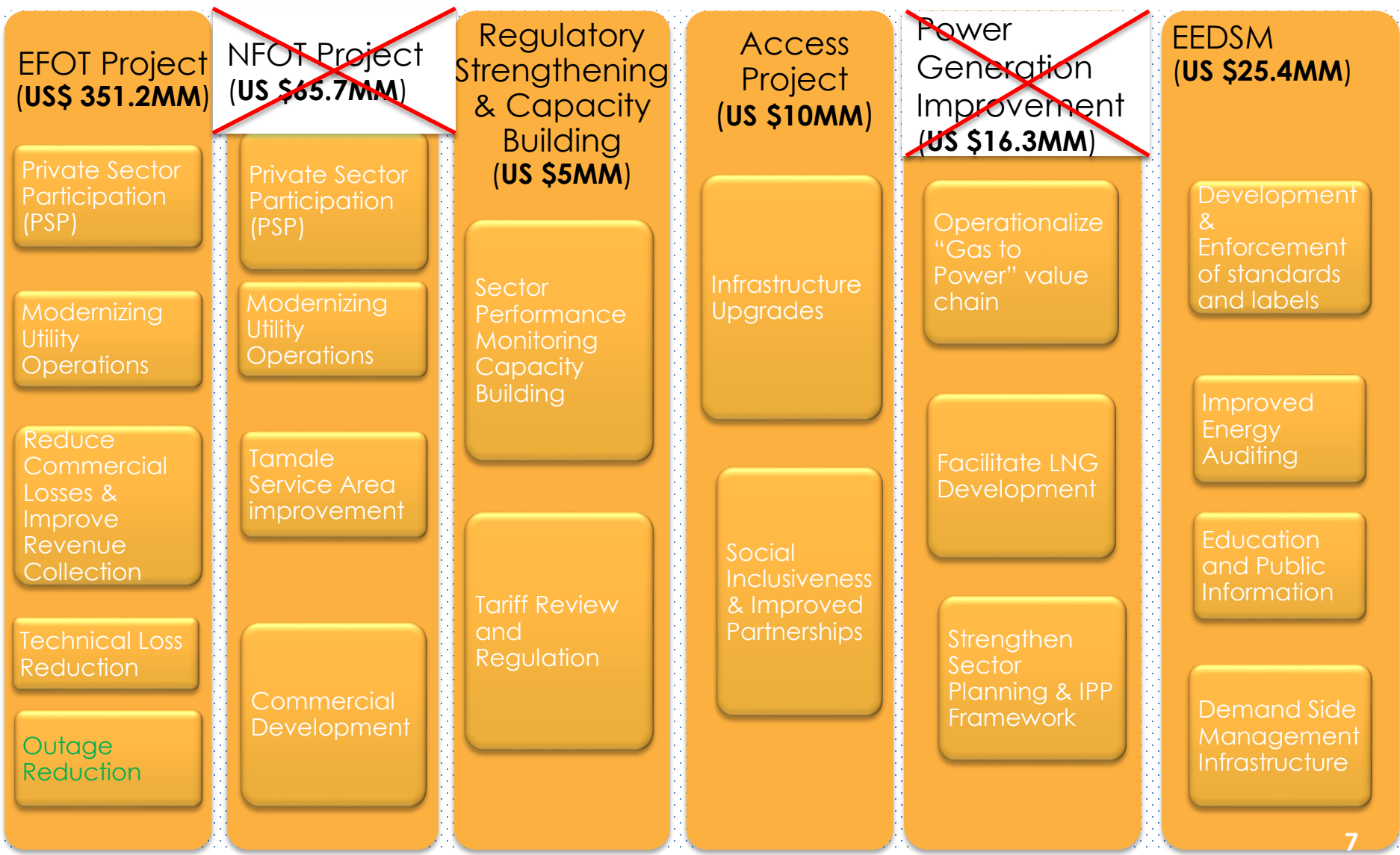
- ✓ ECG Financial & Operational Turnaround (EFOT)
- ✓ NEDCo Financial & Operational Turnaround (NFOT)
- ✓ Access
- ✓ Energy Efficiency & Demand Side Management

Reform/Policy Projects

- ✓ Regulatory Strengthening & Capacity Building
- ✓ Power Generation Sector Improvement
- ✓ Energy Efficiency & Demand Side Management

The scope of ADMS/OMS project falls under **Foundational Projects**.

Compact Projects & Activities – Cont'd



Overview of the EFOT Project

The Objective of “EFOT”:

- Improve the quality and reliability of electricity service delivery by PDS
- Ensure PDS runs on sound commercial principles to become creditworthy and effective off-taker under Power Purchase Agreements (PPA)
- Ensure PDS recovers its costs and invests in maintenance and expansion without requiring regular financial support from Government
- Reduce implicit subsidies (created by losses, underpricing and under billing)

The Principle OMS Functions:

- Prediction of location of transformer, fuse, recloser or breaker that opened upon failure;
- Prioritizing restoration efforts and managing resources based upon criteria such as -locations of emergency facilities, size of outages, and duration of outages;
- Providing information on extent of outages and number of customers impacted to management, media and regulators;
- Estimation of restoration times;
- Management of crews assisting in restoration; and
- Calculation of crews required for restoration.

EFOT Project Activities

Private Sector Participation

Transaction Advisory Services to implement PSP

Consultation with management and employees of ECG to gain support for PSP

Institutional set-up for Acceptable ECG PSP Transaction

Targeted communication strategy & outreach to gain support of stakeholders

Modernizing Utility Operations

GIS, ERP, Data Centre & Comm. Network & ECG Training Centre

Technical Assistance to ECG (TA)

Institutionalizing Gender Responsiveness

Loss Characterization Study

Tariff Applications

Commercial Loss Reduction

Normalizing customer connections to required standard

Strengthening Loss Control Unit

Installation of automated meter readers (AMR)

Replacement of legacy credit meters with pre-payment meters

Technical Loss Reduction

Update of engineering manuals & equipment specifications

Distribution Master Plan

LV Bifurcation

Reactive Power Compensation for Primary Substations

Construction of BSP, Primary substations and interconnecting lines.

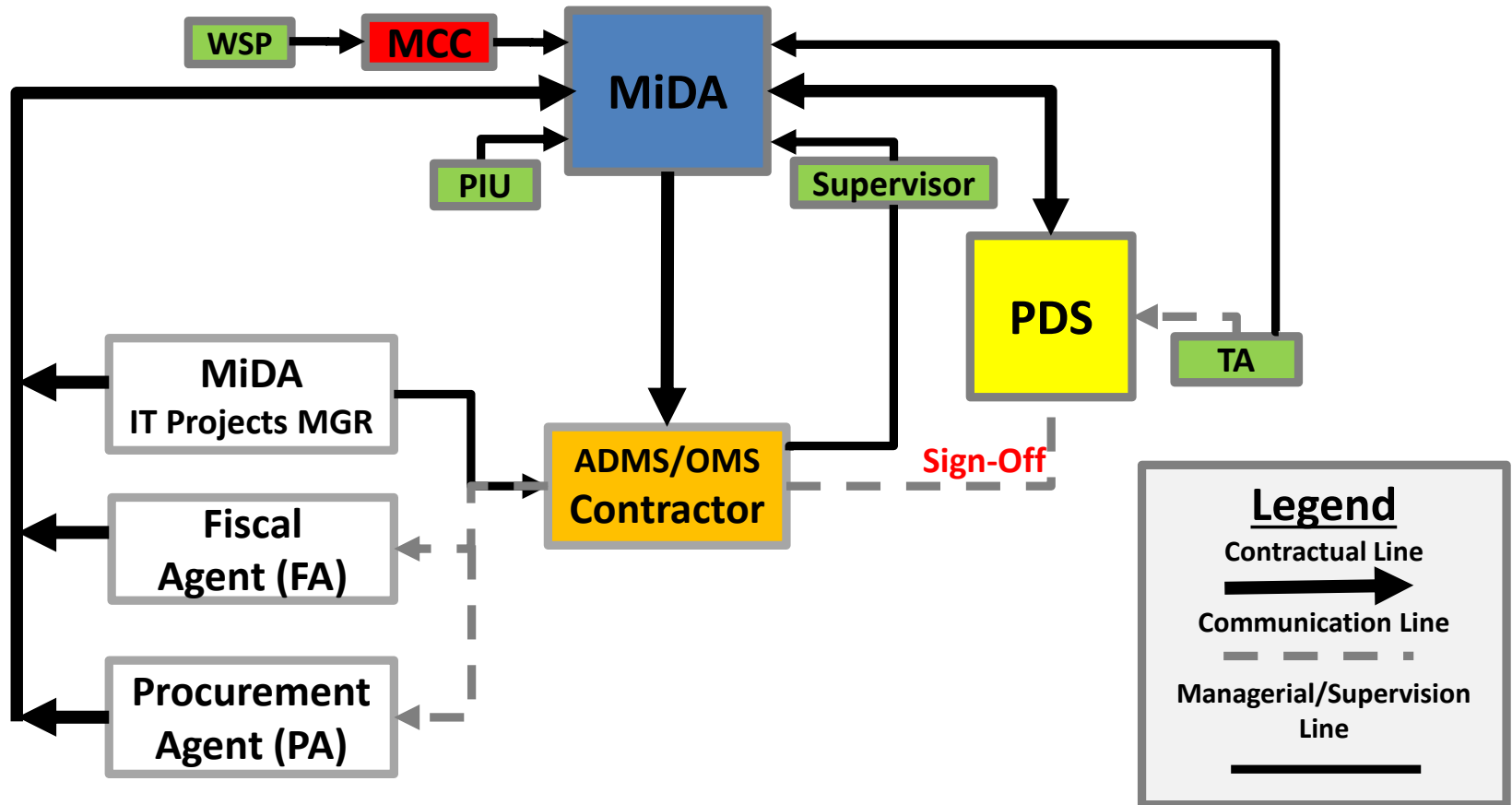
Outage Reduction

Outage Management System

Feeder Sectionalizing and Automation

Provision of specialized vehicles, tools, and equipment.

ADMS/OMS Organizational Chart



**Overview of
The Power Distribution Services (PDS) –
formerly Electricity Company of Ghana
(ECG)**

Overview of PDS

- Public Distribution Services (PDS) is the single largest electricity distribution company in Ghana and operates mainly in the southern part of Ghana (**covers about 36% of Ghana's** land area).
- PDS **distributes over 70% of total** electricity generated in Ghana.
- The operational area is divided into **eight (8) regions** namely; Accra East, Accra West, Ashanti SBU, Central, Eastern, Tema, Volta & Western
(Note: there is one (1) additional region within Accra East Region called the Sub-Transmission region creating a ninth region. This is in charge of operations and maintenances of the sub-transmission network of PDS. It has not been subdivided into operational districts).
- **Total customer population - 3,380,000 as at June 2016.**
- Annual demand growth rate – 10%.

Project Locations

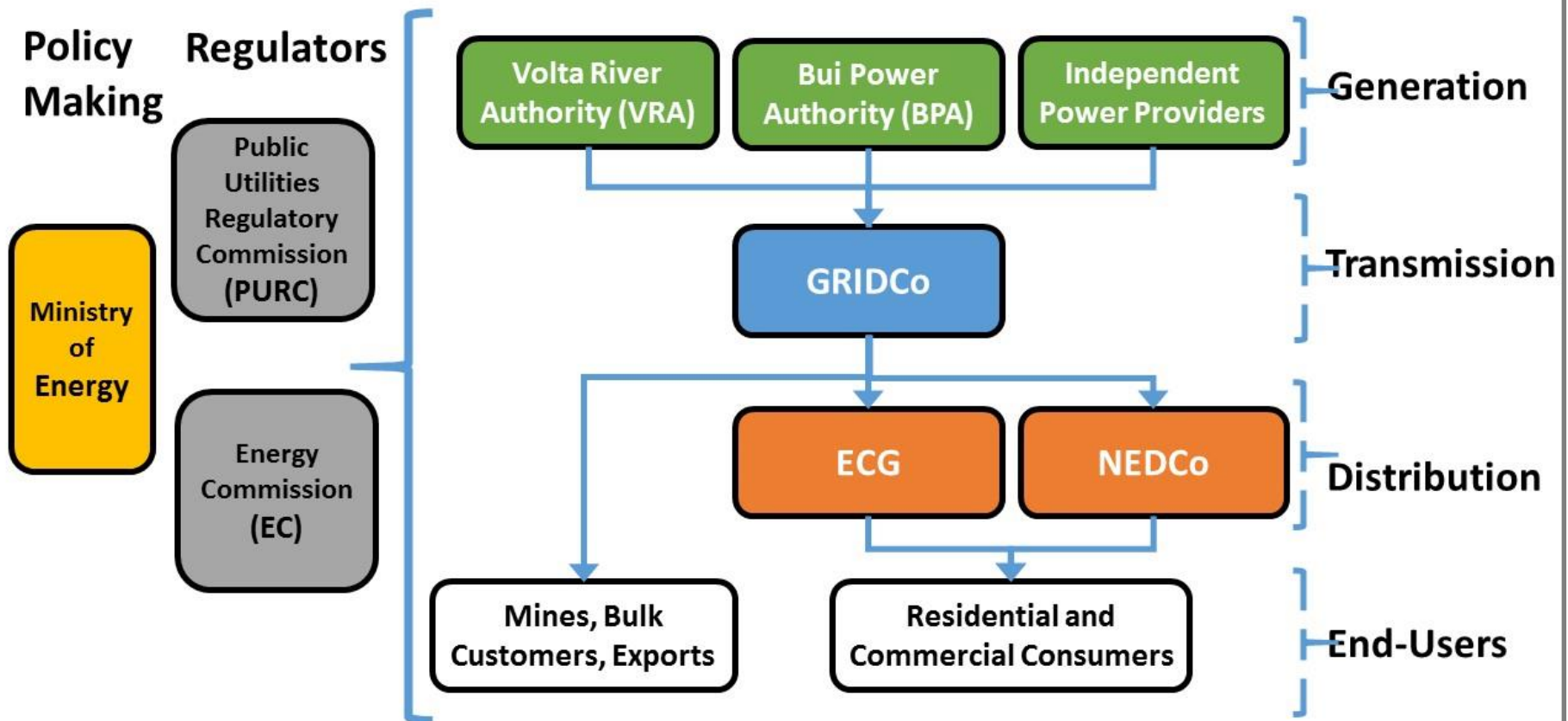
Map of Ghana showing Demarcation of PDS Operational Area



- Contractor is expected to make **periodic visits to PDS & MiDA offices** for workshops and meetings.
- The ADMS/OMS Project shall be designed and implemented for use in **Accra West and East districts**.

Ghana's Power Sector & Role of PDS

The Energy Sector in Ghana

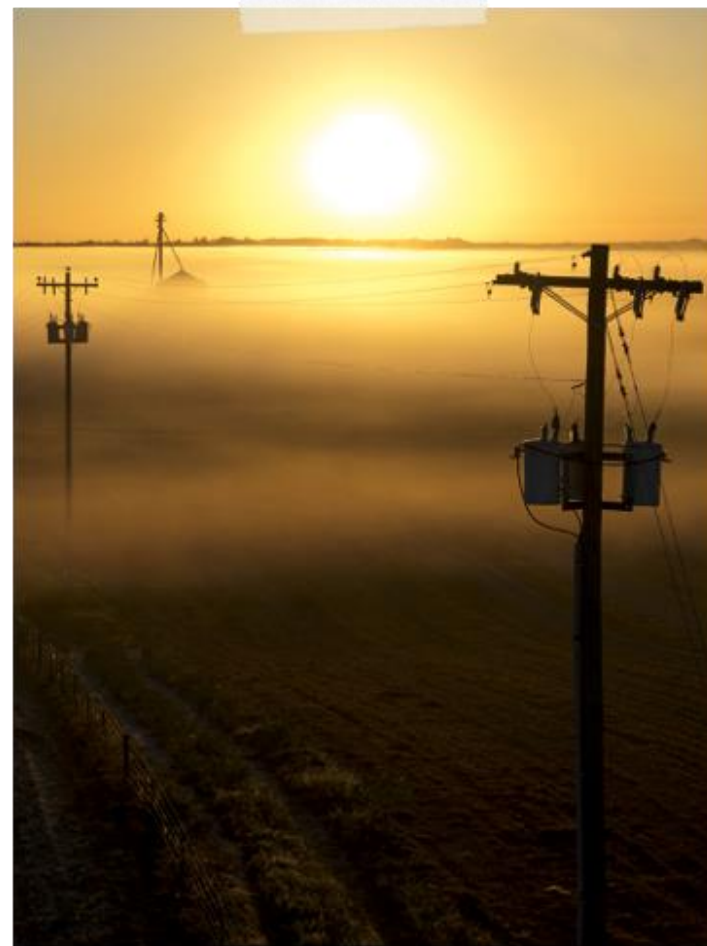


- Transmit, supply, and distribute electricity;
- Purchase energy in bulk from Volta River Authority (VRA) or other supplier for distribution;
- Construct, assemble, repair, maintain, and operate sub-stations, electrical appliances, fittings, and installations;
- Execute and supervise national electrification programs on behalf of the GoG; and
- Carry out activities incidental or conducive to the attainment of the above objectives

Project Scope



- The main outcome of this project is to develop and implement a modern integrated, scalable OMS for ECG/PDS to address and manage the frequent power outages and long outage durations, and meet Regulatory requirements; and
- The OMS provided must also be scalable and capable of integrating with the existing systems plus be based upon a platform which allows the future implementation of an ADMS.



Phasing

- **Phase 1** – Funded through the MiDA compact, ADMS with OMS functionality enabled. In this scenario, ECG/PDS would retain its existing SCADA platform (GE Alstom and Lucy), and ADMS functionality through integration. The existing SCADA platform is capable of integration with an OMS, however as ECG/PDS increases its level of automation, the benefits of ADMS will be greater;
- **Phase 2** – Deployment of the Phase 1 solution to Tema. This may be funded at a later date;
- **Phase 3** – Deployment of the Phase 1 solution to the remainder of ECG/PDS. This may be funded at a later date; and
- **Phase 4** – Funded by ECG/PDS to extend the OMS functionality to the remainder of ECG's/PDS's service territory and to implement advanced applications. During this phase ECG/PDS may elect to replace its legacy SCADA with the ADMS SCADA functionality.



Scope of Phase 1

ADMS Platform with only OMS functionality enabled, providing the following minimum base functionality:

- Trouble call management, i.e. managing customer calls;
- Predictive fault location, i.e. aggregating Trouble Calls into an outage;
- Fault crew management and dispatch;
- Switching and Tagging, for devices that are not automated;
- Situational awareness, e.g. visualizing the current state of the system;
- **FLISR** – fault location isolation service restoration;
- Reporting (pre-packaged and ad hoc);
- Bulk load of the system and customer information, while preserving temporary states;
- Incremental load of the system and customer information, while preserving temporary states;
- The ability to dispatch crews from the Dispatcher consoles or from a mobile client, with the appropriate permissions; and
- Intranet portal offering a summary of outages.

Scope of Phase 1 (Con't)

In addition, the ADMS should be pre-integrated with the following products, which shall be supplied as a component of this solicitation:

- Mobile tool that will provide a real-time graphical view of the current system status and enable the dispatcher to assign trouble work and non-trouble emergency work to crews, and for crews to update work status and close;
- GPS / automatic vehicle location (AVL) functionality, including installation services, for approximately 120 vehicles to update the ADMS with crew location in pseudo real-time;
- An internet-based customer outage portal which will allow customers to see a high-level overview of current outages, query their specific account for outage information, and create a new trouble report online; and
- A customer service representative portal suitable for customer service representatives to view overall outage status at ECG/PDS, query specific customers for outage records, and create a new trouble call record.

Scope of Phase 1 (Con't)

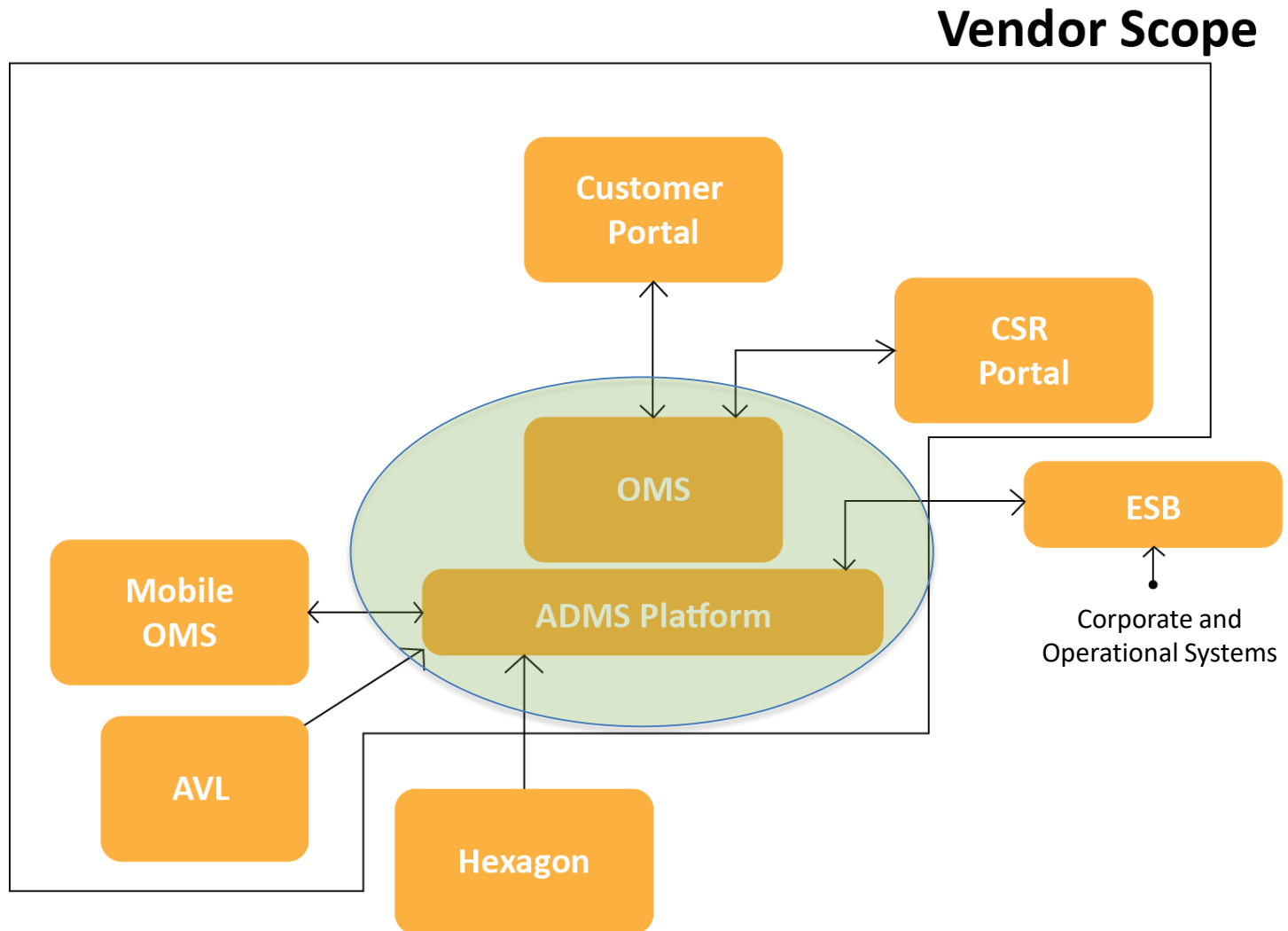
- The ADMS shall be integrated to the legacy GE eTerra SCADA through an ICCP gateway. This integration will be uni-directional, e.g. from SCADA to ADMS, and include updates of the status and analogue points in ADMS from SCADA.
- Standards-based messaging with AMI Head-End system to allow for Power Outage Notification (PON), Power Restoration Notification (PRN), and On Demand Read or Ping.
- **Provision of computing hardware to support the ADMS deployment at ECG/PDS:**
 - 12 high-performance Dispatcher workstations (CPU including redundant network cards, and Multi-monitor displays) to support the proposed ADMS (10 for immediate use and 2 for training and spares);
 - 120 Samsung Tab Active 2 Tablets, or most recent model at the time of deployment to ECG/PDS, including cellular enablement and CIM cards (100 for immediate use and 20 spare); and
 - Physical hardware to support the proposed solution in both a production and a test/development environment. The proposed solution should offer a value-based level of redundancy. The test/development server will be loaded with the same data as the production server and used for staging new releases.

Scope of Phase 1 Services

- **Project Management:**
 - Preparation and maintenance of a detailed project plan in a format that can be edited and modified by MiDA and includes all internal and external dependencies;
 - Facilitation of weekly status calls, including written one-page weekly reports; and
 - Onsite quarterly executive meetings.
- **Implementation and deployment support, including the following components to be performed onsite at ECG/PDS:**
 - Upfront installation of a test/development server, loaded with ECG/PDS data;
 - Requirements and specification workshops;
 - Desktop pilot for ECG/PDS to understand configuration and work flows;
 - Configuration sessions for knowledge transfer;
 - Installation of the product in test/development and production environments;
 - AVL Installation in vehicles;
 - Deployment of a scaled-down pilot to a selected district;
 - Full deployment to Accra East and Accra West;
 - Migration of existing ECG/PDS data into the ADMS;
 - Technical training;
 - Train-the-trainer training for end-users; and
 - Post-deployment support for 20 calendar days following go-live.
- **Warranty and maintenance for the Solution as a whole through the end of 2021.**

Technology Solution





Guiding Principles

- First and foremost, relevant technologies will be used to promote business efficiencies and improve customer service;
- Process standardization should be applied to allow for use of a common application and measurement framework, e.g. “ECG Way”;
- Integration should be based on CIM
- The use of commercial-off-the-shelf software (COTS) will be given precedence to reduce total cost of ownership, implementation timeline, and mitigate unnecessary risk;
- ECG/PDS’s computing environment should be intuitive and user friendly, promoting a “self-service” environment;
- Technology must be tightly integrated between departments (i.e. no data silos) allowing for electronic exchange of data, reducing inefficiencies associated with paper-based processes and duplicate data entry;
- Use both lessons learned from other utilities and industry best practices to provide ECG/PDS with cost-effective solutions; and
- Business benefit will be quantitatively justified and monitored through the implementation of ECG/PDS specific Key Performance Indicators (KPI).

Timeframe



Timeframe

Item	Subsystem / Item	Site	Delivery	Installation
1	4.1.1 – Project kickoff via conference call	Offsite	W0	
2	4.1.2 - Project Management – Delivery of Integrated Project Plan with All Supplier Tasks, and Dependencies.	Projects Office	W2	
3	4.1.3 – Onsite Project Launch / Kickoff – Project Kickoff Meeting	Projects Office	W3	
4	4.1.4 - Project Discovery Phase – Technical Planning (Requirements)	Projects Office	W10	
5	4.1.5 - Project Design Phase – Architecture, Specifications, Design, and Ordering of Hardware	Projects Office	W20	
6	4.1.6 - Project Development Phase – Building the Solution and Data Migration	Projects Office	W48	W50
7	4.1.7 - Project Test & Deployment Phase =- SAT, Testing, Training, Optimization, & Project Go-Live	Control Center		
8	4.1.8 - Project Stabilization Phase - Production in Warranty Period and Final / Operational Acceptance of the Solution by Customer	Control Center	W56	W56
9	Subsystem	Projects Office		
9.1	Server Hardware, LAN & General-Purpose Software	Projects Office		W20
9.2	Database system	Projects Office		W20
9.3	ADMS Software	Projects Office		W20
9.4	Mobile Software	Districts		W30
9.5	CSR Application	Projects Office		W30
9.6	Customer Portal	Projects Office		W30
9.7	AVL	Control Center		W30
9.8	Dispatcher Desktops	Control Center		W30
9.9	Tablets			W30
10	Recurrent Cost Items	--		
10.1	Warranty Services			W56
10.2	Post-Warranty Services			W56+52

Procurement Guidelines



Thank you for your attention!

QUESTIONS AND CLARIFICATIONS?





Millennium Development Authority (MiDA)

PRESENTED BY PROCUREMENT AGENT

DATE: 19TH JUNE 2019

INVITATION FOR BIDS

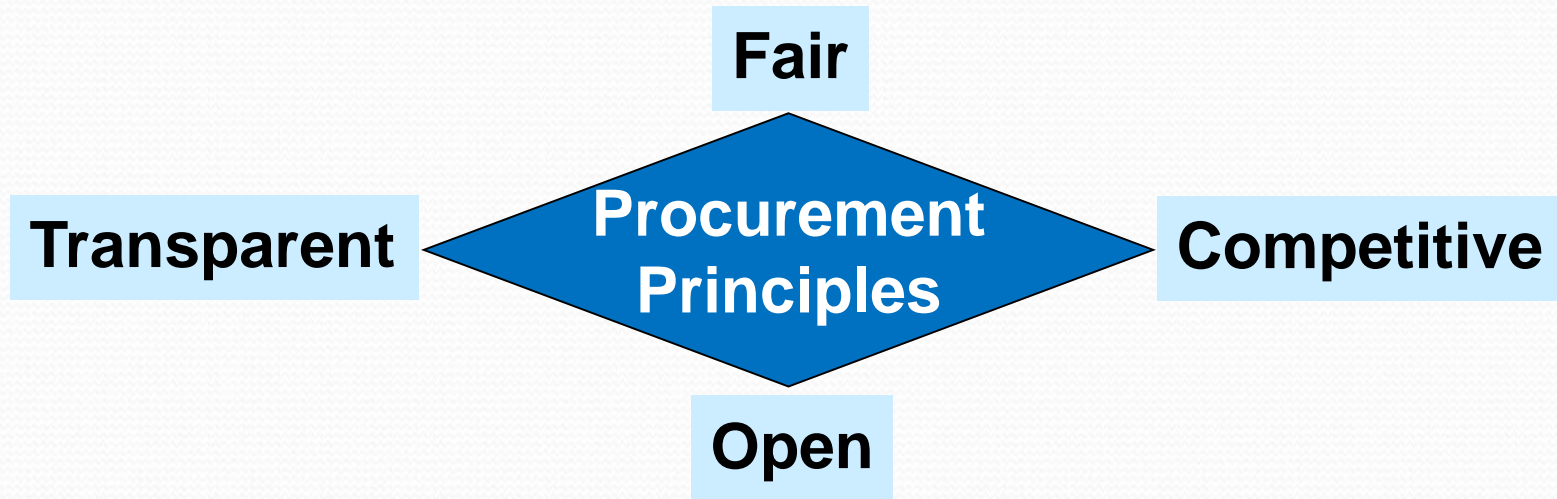
MCC STANDARD BIDDING DOCUMENT ADAPTED FROM IDA/WORLD BANK STANDARD DOCUMENTS BUT ADAPTED TO SUIT MCC

REMEMBER THIS IS UNTIED AID AND COMPETITION IS OPEN WORLDWIDE

IMPORTANT FOR INTERESTED BIDDERS TO READ THE IFB CAREFULLY AS THIS NEW MCC IT SERVICES (NCS) SBD HAS ONLY BEEN EFFECTIVE FROM AUGUST 2016 & UPDATED SEPT. 2018.

IF IN DOUBT ON ANY ISSUE(S) ALWAYS ASK FOR CLARIFICATION

MiDA PROCUREMENT PRINCIPLES



- Procurement Agent to ensure integrity of the process
- Open competition wherever possible
- No geographic or national preferences
- Government-Owned Enterprises (ITB Clause 5.4)
- Independent and suitably qualified Evaluation Panels
- MCC and MiDA Board of Directors approvals over certain thresholds
- Price Reasonableness Analysis
- Contractor Past Performance Reports
- Reference Checks
- Bid Challenge System (www.mida.gov.gh) and Debriefings

PART 1 - SECTION I

INSTRUCTIONS TO BIDDERS

READ CAREFULLY, AND IN PARTICULAR NOTE

ITB CLAUSE 13 DOCUMENTS COMPRISING THE BID:

- ❖ All Bidding Forms in Section IV
- ❖ All Price Schedules in Section IV
- ❖ Bid Security – please refer to the Bid Data Sheet(BDS ITB 17)
- ❖ Written authorization of signatory to commit Bidder (BDS ITB 19.2)
- ❖ Attachment 1 : Bidders Eligibility
- ❖ Attachment 2 : Bidders Qualifications(incl. Manufacturer's Authorization)
- ❖ Attachment 3 : Eligibility of Goods and Services
- ❖ Attachment 4 : Conformity of the Information System to the IFB
- ❖ Attachment 5 : Proposed Subcontractors
- ❖ Attachment 6 : Intellectual Property (Software & Material List)
- ❖ Joint Venture/Association Agreement(s)
- ❖ Any change in the legal structure of the Bidder after the Bid submission?

PART 1 - SECTION I

INSTRUCTIONS TO BIDDERS

READ CAREFULLY, AND IN PARTICULAR NOTE

CLAUSE 17 : BID SECURITY

- ❖ Shall be a demand guarantee and either an unconditional bank guarantee or an irrevocable letter of credit
- ❖ If the financial institution is from outside of Ghana the Bid Security must be confirmed by a correspondent financial institution in Ghana, satisfactory to the Purchaser (MiDA), to make the Bid Security enforceable
- ❖ Shall have a value of One-Hundred-and-Twenty Thousand United States Dollars (US\$ 120,000)
- ❖ Shall be valid until **28th December, 2019 – 120 (+28)** days after Bid Submission

PART 1 - SECTION I

INSTRUCTIONS TO BIDDERS READ CAREFULLY, AND IN PARTICULAR NOTE

ITB CLAUSE 20

The Inner and Outer Envelopes shall:

- ❖ Bear the full name and address of the Bidder
- ❖ Be addressed to MiDA as shown in the Bid Data Sheet (ITB 20.2(b))
- ❖ Be clearly marked with the name and reference for the assignment – also see Bid Data Sheet ITB 1.2;
- ❖ Bear a warning not to open before the time and date for Bid Opening specified in the Bid Data Sheet (ITB 24.1).

PART 1 - SECTIONS II AND III

Section 2 – The Bid Data Sheet (BDS) supersedes the related clauses from the Instructions to Bidders. Please ensure that the BDS is read carefully.

Please note ITB 21.1 that Bids must be submitted no later than **10:00 hours Ghana time on 2nd August, 2019.**

Section 3 – The Bid Review, Evaluation Criteria and Bidder Qualification Requirements contains all the criteria that the Purchaser shall use to review Bids, post qualify Bidders and select the winning Bid.

SECTION III - THE BID REVIEW, EVALUATION CRITERIA AND BIDDER QUALIFICATION

- ❖ 1. Bid Review
 - ❖ 1.1 Administrative Review and
 - ❖ 1.2 Responsiveness determination
- ❖ 2. Evaluation & Comparison of Bids
 - ❖ 2.1 Price Review and
 - ❖ 2.2 Price Reasonableness Determination
 - ❖ 2.3 Technical Evaluation (pass mark \geq 80%)
 - ❖ Combined Scoring (Price plus Technical Score & Ranking)
- ❖ 3. Qualification Review and References and Past Performance Review (of Ranked Bidders starting with the 1st, followed by 2nd etc.)
 - ❖ Bidder References
 - ❖ Bidder Past Performance
 - ❖ Bidder Qualification (4.1 Eligibility, 4.2 Historical Contract Non-Performance, 4.3 Financial Situation & 4.4 Experience)

SECTION IV – BIDDING FORMS

Section IV starts with Notes to Bidders on Working with the Bidding Forms – please follow the instructions carefully.

The Forms include:

- ❖ 1. Bid Submission Form
- ❖ 2. Price Schedule Forms
- ❖ 3. Bidder Qualifications Forms
- ❖ 4. Technical Bid Forms

You must respond to all of the Forms provided.

SECTIONS V, VI AND VII

SECTION V – GENERAL CONDITIONS OF CONTRACT (These cannot be changed)

SECTION VI CONTAINS

- **PARTICULAR CONDITIONS OF CONTRACT (PCC)**
- **ANNEX A – MCC ADDITIONAL PROVISIONS (These cannot be changed)**
- **CONTRACT AGREEMENT AND APPENDICES 1-7, FORMS OF GUARANTEES, CERTIFICATES AND FORMS**

SECTION VII - CONTAINS THE PURCHASER'S REQUIREMENTS

CLARIFICATION QUESTIONS AND RESPONSES

BDS ITB 10.1: CLARIFICATION QUESTIONS MUST BE SENT **BY EMAIL** NO LATER THAN CLOSE OF BUSINESS ON **26TH JUNE, 2019**
TO:

paghana@charleskendall.com

and

procurement@mida.gov.gh

YOU MUST USE THESE ADDRESSES TO SOLICIT A WRITTEN RESPONSE TO YOUR QUESTIONS INCLUDING THOSE RAISED AT THIS MEETING.

RESPONSES TO ALL QUESTIONS WILL BE ISSUED NO LATER THAN 17:00 HOURS GHANA TIME ON 12TH JULY, 2019.

SUBMISSIONS

MiDA PROCUREMENT

4TH FLOOR HERITAGE TOWER

INSIDE THE TENDER BOX

SUBMISSION FORM ON TENDER BOX TO BE COMPLETED.

SUBMISSIONS DUE BY 10:00 HOURS GHANA TIME ON 2ND AUGUST, 2019. A PUBLIC OPENING FOLLOWS IMMEDIATELY AFTER.

LATE SUBMISSIONS WILL NOT BE ACCEPTED.

COMMON CHALLENGES

- ❖ Clarification questions not asked by due date and time
- ❖ Bids submitted late
- ❖ Courier packages not clearly marked
- ❖ Bids not signed
- ❖ Written authorization of signatory to commit the Bidder not provided
- ❖ Bid Envelopes not correctly marked
- ❖ JV or Association documents not provided
- ❖ Government-Owned Entities form not completed and/or signed
- ❖ Bid Security in the wrong format, value and/or validity and /or not supported by correspondent financial institution where required
- ❖ Bid forms not completed correctly and/or submitted
- ❖ Purchaser's requirements & Implementation Schedule not responded to in full
- ❖ References not provided for Bidder and/or Key Personnel
- ❖ Incorrect and/or no email addresses provided for References
- ❖ Missing the Google link (if any)

SPECIFIC CHALLENGES

IT Services

- ❖ Bidders assume SOW based on experiences rather than the specific Purchaser's Requirements in Section VII
- ❖ Lack of appreciation of nature of the Supply & Installation requiring fully functioning Information System (IS) (up to commissioning, training, technical support, maintenance, repair, and other services necessary for proper operation); Ref: BDS ITB 1.1 (u)
- ❖ IFB mistaken for Supply of Information System (IS) only (i.e. just the physical delivery of technology or product)
- ❖ Prices not provided in the format of Price Schedule Forms
- ❖ Prices not quoted CIP (note named places??), and not excluding all Taxes & contributions – BDS ITB 14.4 (a), 14.5 & 14.8
- ❖ Pricing 2-Yrs. Recurrent Costs Tables: (i) 1 Yr. Warranty Period ii) 1 Yr. Post Warranty Period (BDS ITB 14.7)
- ❖ Different interpretation of Recurrent Costs –Check ITB 14.7
- ❖ CD or pen drive copy of Submission not searchable or exact replica of the Original – BDS ITB 19.1



Thank You.

Any Questions?