TERMS OF REFERENCE

CONSULTANCY SERVICES FOR THE PREPARATION OF ROADMAP FOR IMPLEMENTATION AND MONITORING BY ARME THE QUALITY OF SERVICE PROVIDED BY ELECTRA AND AEB TO ITS COSTOMERS

I. INTRODUCTION

Traditional price regulation is changing to allow utilities greater flexibility in making investments in operations and infrastructure. Without appropriate quality regulation, price regulation (rate of return, price cap, or variants) may give companies unintended and distorted incentives for infrastructure investments and service delivery. For example, a company may oversupply quality if rate-of-return regulation encourages excessive capital investments to improve service quality. Because rate-of-return regulation affects quality, the level of quality customers receive for services may be more than they are willing to pay. In other situations, companies may have a perverse incentive to reduce investments and outlays that promote higher service quality. For example, a company subject to price cap regulation may compromise its service quality by reducing costs to increase profits, particularly if its services are not subject to much competition.

Experience in developed and emerging countries worldwide shows that efficient electric utilities use state-of-art information systems to support operations in key business areas: electricity supply, commercial functions, corporate planning and management of corporate resources (accounting, finance, human resources, procurement, logistics, information technology, etc.). And the market of corporate software for utilities shows the existence of several well proven management information systems (MIS) and industrial control systems (ICS) that support the efficient execution of commercial functions (commercial management system - CMS), the effective attention and resolution of customers' complaints related to outages and other incidents in the electric supply received by customers (incidents recording and management system - IRMS), the adequate management of corporate resources (enterprise resource planning – ERP), and the control and acquisition of data from most critical and costly distribution, transmission and generation facilities (supervisory control and data acquisition – SCADA). These MIS and ICS become at present important tools for efficient, transparent and accountable management of the utility.

While the CMS allows efficiently executing and monitoring commercial activities, the IRMS does the same with management of complaints received from customers related to electricity supply. Both systems make possible to permanently track activities carried at the level of each individual customer. On the other hand, the SCADA system enables the utility to monitor and control various parameters of their critical power systems. Therefore, the effective implementation of the CMS, IRMS and SCADA allows the effective measurement of quality of service received by the customers of the distribution company, enabling the fulfillment of this essential role of the sector regulator.

The sustainable development of the power sector of Cap Verde requires that the national electricity distribution company (ELECTRA AND AEB) carries out efficiently its operations in all business areas, in particular those involved in customer service (electricity supply and commercial functions). Through the installation of terminals for remote access from its offices to the MIS and ICS incorporated by ELECTRA and AEB, the sector regulator ARME can have permanent real-time access to the records of those systems (all incidents in electricity supply, commercial complaints, etc.) for each and all customers. This will allow ARME to conduct its own independent monitoring without the need to ask ELECTRA and AEB specific questions about technical and commercial service quality received by the users. Access of ARME to records of the MIS should be exclusively for consultation (no possibility to change any information i.e. read-only access). The access modalities should be defined (authorized staff and type of information available to them) in a way to preserve the confidential character of the commercial information that could have strategic value for ELECTRA and AEB.

II. OBJECTIVE OF THE ASSIGNMENT

This Terms of Reference refers to consultancy services to: (i) Proposal of the Manual of Quality of Service Procedures for the Electricity Sector (MPQS); (ii) assess current situation of ELECTRA and AEB in terms of use of MIS and ICS in key business areas; (iii) define the functional specifications of state-of-art MIS and ICS to support efficient, transparent and accountable execution of operations in all areas; (iv) propose a roadmap for smooth transition from current situation to the full incorporation and effective use of the MIS and ICS; and (v) propose approaches and implementation arrangements for access by ARME to records of the MIS and ICS for the purpose of monitoring quality of services provided by ELECTRA and AEB to its customers.

III. TASKS TO BE CARRIED OUT

Task 1: Proposal of the Manual of Quality of Service Procedures for the electricity sectors (MPQS): sets out the deadlines and procedures to be used by operators in the implementation of the Quality of Service Code for the electricity sector (Deliberation nº5/CA-ARME/2021, January 22nd). Specifically, this task shall entail:

a) Classification of service quality zones in the electric sector;

b) Registration and classification of supply interruptions in the electricity sector;

c) Method for calculating the continuity of service indicators in the electricity sector;

d) Information to be provided in the case of high impact incidents in the electric sector;

e) Classification of exceptional events in the electricity sector;

f) Incentive mechanism to improve the continuity of service in the electric sector;

g) Power quality monitoring plans;

h) Measurement of the electric power quality following customer complaints;

i) Methodology for calculating maximum limits for disturbances emitted to the grid by facilities physically connected to the electricity sector networks;

k) Sending information to the ARME

Task 2: Assessment of current situation of ELECTRA and AEB in terms of use of MIS and ICS in key business areas. This task will be executed through visits to the headquarters of ELCTRA and AEB, to interview managers and heads of units directly in charge of operations in each business area.

Task 3: “Gap analysis”, comparing current situation of ELCTRA and AEB with good practices in terms of use of MIS and ICS by electric utilities in emerging and developed countries.

Task 4: Preparation of a roadmap for ELCTRA and AEB to move from current situation to the full incorporation and effective use of “state-of-art” MIS and ICS in a smooth manner.

Task 5: Definition of approaches and implementation arrangements for access by ARME to records of the MIS and ICS for the purpose of monitoring quality of services provided by ELCTRA and AEB to its customers. Specifically, this task shall entail:

(a) Development of a comprehensive proposal on software and infrastructure requirements that would enable ARME to access relevant information from ELECTRA and AEB systems. The proposal should contain the following:

(i) System architecture requirements;

(ii) Application software requirements;

(iii) Operating system software requirements;

(iv) Computer and telecommunication hardware requirements;

(v) Hardware and software licensing requirements;

(vi) Training requirements for ARME staff who will be in-charge of the system; and

(vii) Any other special ICT/telecommunication requirements.

(b) Definition of access modalities for consultation (propose appropriate controls and security measures for the information access system - no possibility to change any information, authorized staff and type of information available to ARME to preserve the confidential character of the commercial information that could have strategic value for ELCTRA and AEB, etc.)

(c) Ensure the proposed solution is consistent with laws, regulations, policies and standards of the Government of Cabo Verde on ICT systems e.g. the national ICT policy, e-government standards, critical infrastructure protection laws and the growing body of ICT regulations and policies in Cabo Verde.

IV. DELIVERABLES AND TIME SCHEDULE

The assignment is expected to be fully executed during a 6 month period. The Consultant will carry out an initial one-week mission to Cap Verde, to visit ARME, ELECTRA and AEB's headquarters and gather the information needed for Tasks 1,2 and 3.

The Consultant will prepare the following deliverables:

(i) Report to Tasks 1: 3 calendar month after commencement of the assignment.

a. Inception Report: 1 calendar month after commencement of the assignment
b. Interim report: 2 calendar month after commencement of the assignment
c. Draft final report: 3 calendar month after commencement of the assignment.
d. Final report: 3 calendar month after commencement of the assignment.

(ii) Report to Tasks 2 and 3: 4 calendar month after commencement of the assignment.

(iii) Report on Tasks 3 and 4: 5 calendar months after commencement of the assignment.

All the reports listed above should be submitted in three (3) hard copies and electronic version, in English with translates to Portuguese.

V. CONSULTANT QUALIFICATIONS

(i) University degree in engineering.

(ii) At least 10 years of direct experience in operations of electricity distribution companies in emerging countries in areas involved in customer service and industrial control systems.

(iii) Have undertaken similar assignments in comparable organizations and demonstrate extensive and relevant experience.

(iv) Knowledge and experience in business and gap analysis.

(v) Knowledge and experience in computer hardware, computer applications, telecommunication networks, system architecture design, information systems security and data storage management.

(vi) Knowledge and experience in the design, deployment and commissioning of SCADA systems; including setup of SCADA control/monitoring centers.

(vii) The consultant should demonstrate knowledge of the existing or growing body of Cabo Verde Government policies, standards and legislation related to information systems and related security issues.

(viii) The consultant should demonstrate knowledge of internationally recognized cyber-security standards regarding confidentiality, integrity and availability of critical information.