

**REQUEST FOR PROPOSALS**

**FEASIBILITY STUDY FOR THE**

**EKURHULENI SMART METERING PROJECT**

Submission Deadline: **10:00 AM**  
**LOCAL (JOHANNESBURG) TIME**  
**MAY 20, 2013**

Submission Place: MR. MARK WILSON, HEAD OF DEPARTMENT: ENERGY  
EKURHULENI METROPOLITAN MUNICIPALITY  
BOX NUMBER – FIVE (05)  
SANBURN BUILDING  
FINANCE HEAD OFFICE  
68 WOBURN AVENUE  
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1501  
SOUTH AFRICA

SEALED PROPOSALS SHALL BE CLEARLY MARKED AND RECEIVED PRIOR TO THE TIME AND DATE SPECIFIED ABOVE. PROPOSALS RECEIVED AFTER SAID TIME AND DATE WILL NOT BE ACCEPTED OR CONSIDERED.

## REQUEST FOR PROPOSALS

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## **Section 1: INTRODUCTION**

The U.S. Trade and Development Agency (USTDA) has provided a grant in the amount of US\$695,000 to Ekurhuleni Metropolitan Municipality (the “Grantee”) in accordance with a grant agreement dated March 27, 2013 (the “Grant Agreement”) to fund the costs of goods and services required for a feasibility study (“Feasibility Study”) to evaluate the technical, financial, and other critical aspects of implementing advanced metering infrastructure (“Project”) in Ekurhuleni, South Africa (“Host Country”). The Feasibility Study would include the development of a smart metering implementation roadmap and the design of a smart metering pilot project.

The Grant Agreement is attached at Annex 4 for reference. The Grantee is soliciting technical proposals from qualified U.S. firms to provide expert consulting services to perform the Feasibility Study.

### **1.1 BACKGROUND SUMMARY**

The Grantee’s Energy Department (“EED”) is responsible for providing electricity distribution services to over 393,677 customers (approximately 70 percent of all electricity customers) within the Ekurhuleni metropolitan area (Eskom, South Africa’s national electricity utility, provides electricity distribution services to the remaining 30 percent).

Since 2000, EED has undertaken significant efforts to improve its operational efficiency and to refurbish, modernize, and extend its electricity distribution infrastructure. Major projects have included the upgrading and construction of substations, the establishment of nearly 10,000 new electricity connections, the implementation of a maintenance management system, the installation of nearly 15,000 solar water heaters and over 50,000 energy efficient lights in municipal-owned buildings and low-income households, the implementation of an automated meter reading pilot program, and more. To support its capacity to undertake such projects, in 2005 EED established a sustainable maintenance fund, which channels dedicated funding to maintenance, refurbishment and system upgrade projects.

Currently, EED’s electricity metering and billing systems suffer from several shortcomings, including inaccurate meter reading, delays in billing, delays in revenue collection, and unbilled electricity. The implementation of advanced metering infrastructure in the Grantee’s service area would help EED to address all of these challenges and would offer several additional benefits, including quicker response times for outages and other network problems, the utilization of time-of-use tariffs to provide consumers with financial incentives to reduce their electricity usage during peak demand times, improved system reliability, extensive data that can be used for planning purposes and to increase system efficiencies, and much more.

This Feasibility Study would evaluate the technical, financial, environmental and other critical aspects of implementing advanced metering infrastructure in Ekurhuleni, South Africa. The Feasibility Study would include the development of a smart metering implementation roadmap and the design of a smart metering pilot project.

Portions of a background Definitional Mission is provided for reference in Annex 2.

## 1.2 OBJECTIVE

The primary objective of the Feasibility Study is to provide the Grantee with analyses and recommendations that will support its decision-making with regard to the implementation of advanced metering infrastructure. The Terms of Reference (“TOR”) for this Feasibility Study are attached as Annex 5.

## 1.3 PROPOSALS TO BE SUBMITTED

Technical proposals are solicited from interested and qualified U.S. firms. The administrative and technical requirements as detailed throughout the Request for Proposals (“RFP”) will apply. Specific proposal format and content requirements are detailed in Section 3.

The amount for the contract has been established by a USTDA grant of US\$695,000. **The USTDA grant of US\$695,000 is a fixed amount. Accordingly, COST will not be a factor in the evaluation and therefore, cost proposals should not be submitted.** Upon detailed evaluation of technical proposals, the Grantee shall select one firm for contract negotiations.

## 1.4 CONTRACT FUNDED BY USTDA

In accordance with the terms and conditions of the Grant Agreement, USTDA has provided a grant in the amount of US\$695,000 to the Grantee. The funding provided under the Grant Agreement shall be used to fund the costs of the contract between the Grantee and the U.S. firm selected by the Grantee to perform the TOR. The contract must include certain USTDA Mandatory Contract Clauses relating to nationality, taxes, payment, reporting, and other matters. The USTDA nationality requirements and the USTDA Mandatory Contract Clauses are attached at Annexes 3 and 4, respectively, for reference.

## **Section 2: INSTRUCTIONS TO OFFERORS**

### **2.1 PROJECT TITLE**

The project is called Ekurhuleni Smart Metering.

### **2.2 DEFINITIONS**

Please note the following definitions of terms as used in this RFP.

The term "Request for Proposals" means this solicitation of a formal technical proposal, including qualifications statement.

The term "Offeror" means the U.S. firm, including any and all subcontractors, which responds to the RFP and submits a formal proposal and which may or may not be successful in being awarded this procurement.

### **2.3 DEFINITIONAL MISSION REPORT**

USTDA sponsored a Definitional Mission to address technical, financial, sociopolitical, environmental and other aspects of the proposed project. Portions of the report are attached at Annex 2 for background information only. Please note that the TOR referenced in the report are included in this RFP as Annex 5.

### **2.4 EXAMINATION OF DOCUMENTS**

Offerors should carefully examine this RFP. It will be assumed that Offerors have done such inspection and that through examinations, inquiries and investigation they have become familiarized with local conditions and the nature of problems to be solved during the execution of the Feasibility Study.

Offerors shall address all items as specified in this RFP. Failure to adhere to this format may disqualify an Offeror from further consideration.

Submission of a proposal shall constitute evidence that the Offeror has made all the above mentioned examinations and investigations, and is free of any uncertainty with respect to conditions which would affect the execution and completion of the Feasibility Study.

## **2.5 PROJECT FUNDING SOURCE**

The Feasibility Study will be funded under a grant from USTDA. The total amount of the grant is not to exceed US\$695,000.

## **2.6 RESPONSIBILITY FOR COSTS**

Offeror shall be fully responsible for all costs incurred in the development and submission of the proposal. Neither USTDA nor the Grantee assumes any obligation as a result of the issuance of this RFP, the preparation or submission of a proposal by an Offeror, the evaluation of proposals, final selection or negotiation of a contract.

## **2.7 TAXES**

Offerors should submit proposals that note that in accordance with the USTDA Mandatory Contract Clauses, USTDA grant funds shall not be used to pay any taxes, tariffs, duties, fees or other levies imposed under laws in effect in the Host Country.

## **2.8 CONFIDENTIALITY**

The Grantee will preserve the confidentiality of any business proprietary or confidential information submitted by the Offeror, which is clearly designated as such by the Offeror, to the extent permitted by the laws of the Host Country.

## **2.9 ECONOMY OF PROPOSALS**

Proposal documents should be prepared simply and economically, providing a comprehensive yet concise description of the Offeror's capabilities to satisfy the requirements of the RFP. Emphasis should be placed on completeness and clarity of content.

## **2.10 OFFEROR CERTIFICATIONS**

The Offeror shall certify (a) that its proposal is genuine and is not made in the interest of, or on behalf of, any undisclosed person, firm, or corporation, and is not submitted in conformity with, and agreement of, any undisclosed group, association, organization, or corporation; (b) that it has not directly or indirectly induced or solicited any other Offeror to put in a false proposal; (c) that it has not solicited or induced any other person, firm, or corporation to refrain from submitting a proposal; and (d) that it has not sought by collusion to obtain for itself any advantage over any other Offeror or over the Grantee or USTDA or any employee thereof.

## **2.11 CONDITIONS REQUIRED FOR PARTICIPATION**

Only U.S. firms are eligible to participate in this tender. However, U.S. firms may utilize subcontractors from the Host Country for up to 20 percent of the amount of the USTDA grant for

specific services from the TOR identified in the subcontract. USTDA's nationality requirements, including definitions, are detailed in Annex 3.

## **2.12 LANGUAGE OF PROPOSAL**

All proposal documents shall be prepared and submitted in English, and only English.

## **2.13 PROPOSAL SUBMISSION REQUIREMENTS**

The **Cover Letter** in the proposal must be addressed to:

**Mr. Mark Wilson  
Head of Department: Energy  
Ekurhuleni Metropolitan Municipality  
Box Number – Five (05)  
Sanburn Building  
Finance Head Office  
68 Woburn Avenue  
Benoni  
1501  
South Africa**

**An Original and two (2) copies of your proposal must be received at the above address no later than 10:00 a.m., on May 20, 2013.**

Proposals may be either sent by mail, overnight courier, or hand-delivered. Whether the proposal is sent by mail, courier or hand-delivered, the Offeror shall be responsible for actual delivery of the proposal to the above address before the deadline. Any proposal received after the deadline will be returned unopened. The Grantee will promptly notify any Offeror if its proposal was received late.

Upon timely receipt, all proposals become the property of the Grantee.

## **2.14 PACKAGING**

The original and each copy of the proposal must be sealed to ensure confidentiality of the information. The proposals should be individually wrapped and sealed, and labeled for content including the name of the project and designation of "original" or "copy number x." The original and two (2) copies should be collectively wrapped and sealed, and clearly labeled, including the contact name and the name of the project.

Neither USTDA nor the Grantee will be responsible for premature opening of proposals not properly wrapped, sealed and labeled.

## **2.15 OFFEROR'S AUTHORIZED NEGOTIATOR**

The Offeror must provide the name, title, address, telephone number, e-mail address and fax number of the Offeror's authorized negotiator. The person cited shall be empowered to make binding commitments for the Offeror and its subcontractors, if any.

## **2.16 AUTHORIZED SIGNATURE**

The proposal must contain the signature of a duly authorized officer or agent of the Offeror empowered with the right to bind the Offeror.

## **2.17 EFFECTIVE PERIOD OF PROPOSAL**

The proposal shall be binding upon the Offeror for sixty (60) days after the proposal due date, and Offeror may withdraw or modify this proposal at any time prior to the due date upon written request, signed in the same manner and by the same person who signed the original proposal.

## **2.18 EXCEPTIONS**

All Offerors agree by their response to this RFP announcement to abide by the procedures set forth herein. No exceptions shall be permitted.

## **2.19 OFFEROR QUALIFICATIONS**

As provided in Section 3, Offerors shall submit evidence that they have relevant past experience and have previously delivered advisory, feasibility study and/or other services similar to those required in the TOR, as applicable.

## **2.20 RIGHT TO REJECT PROPOSALS**

The Grantee reserves the right to reject any and all proposals.

## **2.21 PRIME CONTRACTOR RESPONSIBILITY**

Offerors have the option of subcontracting parts of the services they propose. The Offeror's proposal must include a description of any anticipated subcontracting arrangements, including the name, address, and qualifications of any subcontractors. USTDA nationality provisions apply to the use of subcontractors and are set forth in detail in Annex 3. The successful Offeror shall cause appropriate provisions of its contract, including all of the applicable USTDA Mandatory Contract Clauses, to be inserted in any subcontract funded or partially funded by USTDA grant funds.

## **2.22 AWARD**

The Grantee shall make an award resulting from this RFP to the best qualified Offeror, on the basis of the evaluation factors set forth herein. The Grantee reserves the right to reject any and all proposals received.

### **2.23 COMPLETE SERVICES**

The successful Offeror shall be required to (a) provide local transportation, office space and secretarial support required to perform the TOR if such support is not provided by the Grantee; (b) provide and perform all necessary labor, supervision and services; and (c) in accordance with best technical and business practice, and in accordance with the requirements, stipulations, provisions and conditions of this RFP and the resultant contract, execute and complete the TOR to the satisfaction of the Grantee and USTDA.

### **2.24 INVOICING AND PAYMENT**

Deliverables under the contract shall be delivered on a schedule to be agreed upon in a contract with the Grantee. The Contractor may submit invoices to the designated Grantee Project Director in accordance with a schedule to be negotiated and included in the contract. After the Grantee's approval of each invoice, the Grantee will forward the invoice to USTDA. If all of the requirements of USTDA's Mandatory Contract Clauses are met, USTDA shall make its respective disbursement of the grant funds directly to the U.S. firm in the United States. All payments by USTDA under the Grant Agreement will be made in U.S. currency. Detailed provisions with respect to invoicing and disbursement of grant funds are set forth in the USTDA Mandatory Contract Clauses attached in Annex 4.

### **Section 3: PROPOSAL FORMAT AND CONTENT**

To expedite proposal review and evaluation, and to ensure that each proposal receives the same orderly review, all proposals must follow the format described in this section.

Proposal sections and pages shall be appropriately numbered and the proposal shall include a Table of Contents. Offerors are encouraged to submit concise and clear responses to the RFP. Proposals shall contain all elements of information requested without exception. Instructions regarding the required scope and content are given in this section. The Grantee reserves the right to include any part of the selected proposal in the final contract.

The proposal shall consist of a technical proposal only. A cost proposal is NOT required because the amount for the contract has been established by a USTDA grant of US\$695,000, which is a fixed amount.

Offerors shall submit one (1) original and two (2) copies of the proposal. Proposals received by fax cannot be accepted.

Each proposal must include the following:

- Transmittal Letter,
- Cover/Title Page,
- Table of Contents,
- Executive Summary,
- Firm Background Information,
- Completed U.S. Firm Information Form,
- Organizational Structure, Management Plan, and Key Personnel,
- Technical Approach and Work Plan, and
- Experience and Qualifications.

Detailed requirements and directions for the preparation of the proposal are presented below.

#### **3.1 EXECUTIVE SUMMARY**

An Executive Summary should be prepared describing the major elements of the proposal, including any conclusions, assumptions, and general recommendations the Offeror desires to make. Offerors are requested to make every effort to limit the length of the Executive Summary to no more than five (5) pages.

### **3.2 U.S. FIRM INFORMATION**

A U.S. Firm Information Form in .pdf fillable format is attached at the end of this RFP in Annex 6. The Offeror must complete the U.S. Firm Information Form and include the completed U.S. Firm Information Form with its proposal.

### **3.3 ORGANIZATIONAL STRUCTURE, MANAGEMENT, AND KEY PERSONNEL**

Describe the Offeror's proposed project organizational structure. Discuss how the project will be managed including the principal and key staff assignments for this Feasibility Study. Identify the Project Manager who will be the individual responsible for this project. The Project Manager shall have the responsibility and authority to act on behalf of the Offeror in all matters related to the Feasibility Study.

Provide a listing of personnel (including subcontractors) to be engaged in the project, including both U.S. and local subcontractors, with the following information for key staff: position in the project; pertinent experience, curriculum vitae; other relevant information. If subcontractors are to be used, the Offeror shall describe the organizational relationship, if any, between the Offeror and the subcontractor.

A manpower schedule and the level of effort for the project period, by activities and tasks, as detailed under the Technical Approach and Work Plan shall be submitted. A statement confirming the availability of the proposed project manager and key staff over the duration of the project must be included in the proposal.

### **3.4 TECHNICAL APPROACH AND WORK PLAN**

Describe in detail the proposed Technical Approach and Work Plan (the "Work Plan"). Discuss the Offeror's methodology for completing the project requirements. Include a brief narrative of the Offeror's methodology for completing the tasks within each activity series. Begin with the information gathering phase and continue through delivery and approval of all required reports.

Prepare a detailed schedule of performance that describes all activities and tasks within the Work Plan, including periodic reporting or review points, incremental delivery dates, and other project milestones.

Based on the Work Plan, and previous project experience, describe any support that the Offeror will require from the Grantee. Detail the amount of staff time required by the Grantee or other participating agencies and any work space or facilities needed to complete the Feasibility Study.

### **3.5 EXPERIENCE AND QUALIFICATIONS**

Provide a discussion of the Offeror's experience and qualifications that are relevant to the objectives and TOR for the Feasibility Study. If a subcontractor(s) is being used, similar information must be provided for the prime and each subcontractor firm proposed for the project.

The Offeror shall provide information with respect to relevant experience and qualifications of key staff proposed. The Offeror shall include letters of commitment from the individuals proposed confirming their availability for contract performance.

As many as possible but not more than six (6) relevant and verifiable project references must be provided for each of the Offeror and any subcontractor, including the following information:

- Project name,
- Name and address of client (indicate if joint venture),
- Client contact person (name/ position/ current phone and fax numbers),
- Period of Contract,
- Description of services provided,
- Dollar amount of Contract, and
- Status and comments.

Offerors are strongly encouraged to include in their experience summary primarily those projects that are similar to the Feasibility Study as described in this RFP.

## **Section 4: AWARD CRITERIA**

Individual proposals will be initially evaluated by a Procurement Selection Committee of representatives from the Grantee. The Committee will then conduct a final evaluation and completion of ranking of qualified Offerors. The Grantee will notify USTDA of the best qualified Offeror, and upon receipt of USTDA's no-objection letter, the Grantee shall promptly notify all Offerors of the award and negotiate a contract with the best qualified Offeror. If a satisfactory contract cannot be negotiated with the best qualified Offeror, negotiations will be formally terminated. Negotiations may then be undertaken with the second most qualified Offeror and so forth.

The selection of the Contractor will be based on the following criteria:

### **Organizational Structure, Management, and Key Personnel: 30 points maximum**

- Quality of the Offeror's proposed organizational structure and management plan for the Feasibility Study: 5 points
- Experience and expertise of the Offeror's proposed Project Manager in designing and supervising smart grid projects: 10 points
- Experience and expertise of other key personnel (including subcontractors) in fulfilling the various functions required for the Feasibility Study. The proposed Project team should have qualifications and experience in engineering, design, technical analysis, operations planning and modeling, environmental assessments, and smart metering infrastructure, including software and hardware for integration into existing systems.: 15 points

### **Technical Approach and Work Plan: 30 points maximum**

- Quality of the Offeror's proposed Technical Approach and Work Plan. Offeror shall demonstrate an understanding of all project tasks, and clearly note objectives that should be achieved at the end of each task.: 20 points
- Quality of the Offeror's proposed schedule for carrying out the Feasibility Study. Offeror's proposed Work Plan should be detailed, realistic, and manageable.: 10 points

### **Offeror's Experience and Qualifications: 30 points maximum**

- Offeror's experience and qualifications in performing similar feasibility studies or other closely related work, with one project currently ongoing or recently completed. The reference projects (except for current or recently completed) should be of similar (or larger) size and complexity to the proposed Project.: 20 points
- Offeror's experience working with public sector electricity distribution companies: 10 points

### **Country/Regional Experience: 10 points maximum**

- Offeror's experience (including subcontractors) working in South Africa and/or other similar environments in the electricity distribution and/or electricity metering sectors. Offerors will be expected to provide evidence of satisfactorily executing at least two (2) international projects in the last five years. The reference projects (except for current or recently completed) should be of similar (or larger) size and complexity to the proposed Project.: 10 points

Proposals that do not include all requested information may be considered non-responsive.

Price will not be a factor in contractor selection.

## **ANNEX 1**

Mr. Mark Wilson, Head of Department: Energy; Ekurhuleni Metropolitan Municipality, Box Number – Five (5), Sanburn Building, Finance Head Office, 68 Woburn Avenue, Benoni, 1501; South Africa

B— South Africa: Feasibility Study for the Ekurhuleni Smart Metering Project

POC: Anthony O'Tapi, USTDA, 1000 Wilson Boulevard, Suite 1600, Arlington, VA 22209-3901, Tel: (703) 875-4357, Fax: (703) 875-4009. EKURHULENI SMART METERING.

The Grantee invites submission of qualifications and proposal data (collectively referred to as the "Proposal") from interested U.S. firms that are qualified on the basis of experience and capability to develop a feasibility study to evaluate the technical, financial, and other critical aspects of implementing advanced metering infrastructure in Ekurhuleni, South Africa. The Feasibility Study would include the development of a smart metering implementation roadmap and the design of a smart metering pilot project.

The Grantee's Energy Department (EED) is responsible for providing electricity distribution services to 393,677 electricity customers (approximately 70 percent of all electricity customers) within the Ekurhuleni metropolitan area. Since 2000, EED has undertaken significant efforts to improve its operational efficiency and to refurbish, modernize, and extend its electricity distribution infrastructure. This Feasibility Study would evaluate the technical, financial, environmental and other critical aspects of implementing advanced metering infrastructure in Ekurhuleni, South Africa. The Feasibility Study would include the development of a smart metering implementation roadmap and the design of a smart metering pilot project.

The primary objective of the Study is to provide the Grantee with analyses and recommendations that will support its decision-making with regard to the implementation of advanced metering infrastructure. The U.S. firm selected will be paid in U.S. dollars from a US \$695,000 grant to the Grantee from the U.S. Trade and Development Agency ("USTDA").

A detailed Request for Proposals (RFP), which includes requirements for the Proposal, the Terms of Reference, and portions of a background definitional mission/desk study report are available from USTDA, at 1000 Wilson Boulevard, Suite 1600, Arlington, VA 22209-3901. To request the RFP in PDF format, please go to: <https://www.ustda.gov/businessopps/rfpform.asp>. Requests for a mailed hardcopy version of the RFP may also be faxed to the IRC, USTDA at 703-875-4009. In the fax, please include your firm's name, contact person, address, and telephone number. Some firms have found that RFP materials sent by U.S. mail do not reach them in time for preparation of an adequate response. Firms that want USTDA to use an overnight delivery service should include the name of the delivery service and your firm's account number in the request for the RFP. Firms that want to send a courier to USTDA to retrieve the RFP should allow one hour after faxing the request to USTDA before scheduling a pick-up. Please note that no telephone requests for the RFP will be honored. Please check your internal fax verification receipt. Because of the large number of RFP requests, USTDA cannot respond to requests for fax verification. Requests for RFPs received before 4:00 PM will be mailed the same day.

Requests received after 4:00 PM will be mailed the following day. Please check with your courier and/or mail room before calling USTDA.

Only U.S. firms and individuals may bid on this USTDA financed activity. Interested firms, their subcontractors and employees of all participants must qualify under USTDA's nationality requirements as of the due date for submission of qualifications and proposals and, if selected to carry out the USTDA-financed activity, must continue to meet such requirements throughout the duration of the USTDA-financed activity. All goods and services to be provided by the selected firm shall have their nationality, source and origin in the U.S. or host country. The U.S. firm may use subcontractors from the host country for up to 20 percent of the USTDA grant amount. Details of USTDA's nationality requirements and mandatory contract clauses are also included in the RFP.

Interested U.S. firms should submit their Proposal in English directly to the Grantee by 10:00 a.m., May 20, 2013 at the above address. Evaluation criteria for the Proposal are included in the RFP. Price will not be a factor in contractor selection, and therefore, cost proposals should NOT be submitted. The Grantee reserves the right to reject any and/or all Proposals. The Grantee also reserves the right to contract with the selected firm for subsequent work related to the project. The Grantee is not bound to pay for any costs associated with the preparation and submission of Proposals.

If approved, the FS would include an analysis of EED's existing electricity distribution system, an assessment of EED's performance in key areas, an evaluation of the technical, financial and regulatory feasibility of implementing advanced metering infrastructure in Ekurhuleni, the preparation of a smart metering implementation roadmap, and the preparation of a smart metering pilot project.

## ANNEX 2

## **EKURHULENI SMART METERING AND ROADMAP PROJECT**

### **2.1 Executive Summary**

This proposed project was identified by the Ekurhuleni Metropolitan Municipality (EMM). EMM has over 300,000 customers and covers a territory of about 2,000 square kilometers.

The proposed project is designed to provide improvements to the distribution of electric networks by installing a smart meter system and developing an overall smart grid roadmap. The major tasks of the proposed study include:

- Existing Distribution System Analysis;
- Smart Grid Technologies Review;
- Smart Grid Maturity Assessment;
- Preparation of Smart Grid Implementation Roadmap;
- Smart Grid Pilot Project Preparation; and
- Draft Final and Final Report Preparation and Presentation.

The overall project cost is estimated at \$56 million. U.S. exports could reach \$31 million (55% of the total cost) on a probability weighted basis. U.S. exports will consist mainly of smart meters, communication infrastructure, data management software and other related hardware. The proposed study cost is estimated at \$693,345 and should be completed within nine months.

### **2.2 Project Background and Description**

Ekurhuleni Metropolitan Municipality was established in 2000. It covers an extensive geographical area from Germiston in the west to Springs and Nigel in the east. Ekurhuleni was established as one of six metropolitan municipalities resulting from the restructuring of local government in 2000.

The former local administrations of nine towns on the East Rand – Alberton, Benoni, Boksburg, Brakpan, Edenvale / Lethabong, Germiston, Kempton Park / Tembisa, Nigel and Springs – were amalgamated into the new metropolitan municipality along with two other councils – the Khayalami Metropolitan Council and the Eastern Gauteng Services Council. EMM is now 10 years old and has gone a long way in consolidating its systems and processes for the sustained delivery of services in the city.

Ekurhuleni has a total surface area of about 2,000km<sup>2</sup> with a population of about 2.8 million. This constitutes about 5.6% of the national population and makes up 28% of Gauteng's population. The population density is approximately 1,400 people per km<sup>2</sup>, making Ekurhuleni one of the most densely populated areas in the country and in the province. By comparison, population density in Gauteng is 604 people per km<sup>2</sup> and 40 people per km<sup>2</sup> in the country.

The Ekurhuleni metropolitan economy is larger and more diverse than that of many small countries in Africa, including all the countries in Southern Africa. It accounts for nearly a quarter of Gauteng's economy, which in turn contributes more than a third of the national Gross Domestic Product.

Ekurhuleni contributes about 7% to the country's spending power and about 7.4% to the nation's production. In most respects – per capita income, unemployment, poverty, average wages and other indicators of human development – it is similar to the rest of Gauteng. However, there is one important structural difference: many factories producing goods and commodities are located in Ekurhuleni.

Manufacturing in Ekurhuleni accounts for about 21% of Gauteng's GDP. In Ekurhuleni itself, manufacturing accounts for some 28% of total production output. Because of the largest concentration of industry in the whole of South Africa (and in Africa), Ekurhuleni is often referred to as "Africa's Workshop".

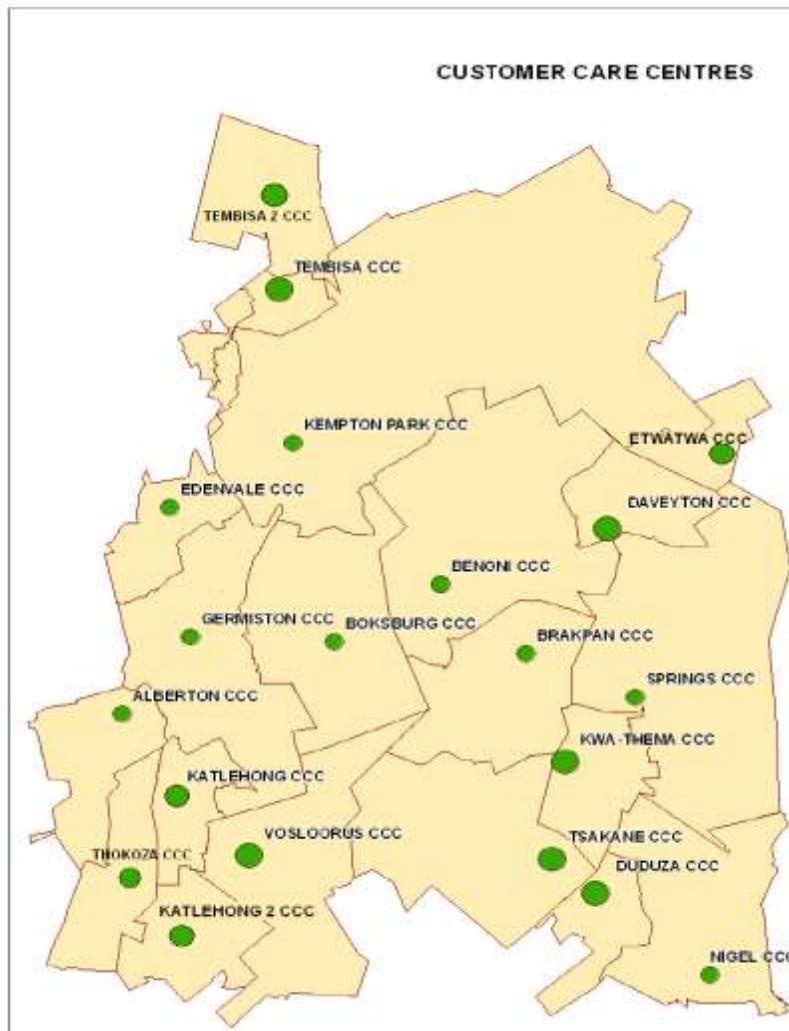
The downside of the strong manufacturing sector is that globalization has had a definite impact on the structure of production and on the demand for labor. Ekurhuleni, although not benefiting from direct capital investments as a result of the automotive sector developments in the country, continues to play the role of the workshop of the economy, with production of structural steel and fabricated metal products contributing to the economies of other areas.

Ekurhuleni has a network of roads, airports, railway lines, telephones, electricity grids and telecommunications. Ekurhuleni can in fact, be regarded as the transportation hub of the country. The municipality is home to O.R. Tambo International Airport, the busiest airport in Africa. The airport services the continent and is linked to major cities in the world. Similarly, many of the world's leading airlines use O.R. Tambo International Airport. Some 14 million passengers pass through the airport each year. In addition, a number of smaller domestic airlines connect O.R. Tambo International Airport with cities throughout South Africa. The country's largest railway hub is situated in Germiston in Ekurhuleni and links the city to all the major cities and ports in the Southern African region. A number of South Africa's modern freeways connect Ekurhuleni to other cities and provinces. The Maputo Corridor development, South Africa's most advanced spatial development initiative, connects Ekurhuleni to the capital of Mozambique and the largest South African Indian Ocean port. Direct rail, road and air links connect

Ekurhuleni to Durban, the biggest and 6 busiest port in South Africa. As part of the preparation for the 2010 Soccer World Cup, a number of strategic roads around O.R. Tambo International Airport were upgraded for the transport of goods and services<sup>1</sup>.

Exhibit 2-1 provides a layout of the EMM geographical layout.

### Exhibit 2-1 - EMM Geography



Source: Annual Report

Some customers within the EMM boundary are directly supplied by Eskom, while some are supplied by Eskom through a wheeling arrangement with EMM, whereby Eskom supplies the EMM suburb which then transfers the power through its own infrastructure to an Eskom substation, from which the local community is directly supplied. The specific townships within the various regions supplied by EMM and

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<sup>1</sup> Annual Report 2010/11

Eskom directly are reflected in Exhibit 2-2. The Eskom supply points and major distribution lines from 132 kV down to 33 kV are shown in the Exhibit.

**Exhibit 2-2 - EMM Distribution System and Major Substations**

CUSTOMER CARE CENTRES	NUMBER		SUBSTATION SIZE (kV)
	ESKOM INTAKE POINTS	MAIN SUBSTATIONS	
<b>Eastern Region</b>			
Benoni	2	9	
Brakpan			
Springs/Nigel	3	20	22/ Supertension
<b>Southern Region</b>			
Alberton	3	10	33/
Boksburg			
Germiston	6	18	132/
		4	42/
<b>Northern Region</b>	6	4	33/11
		2	44/11
		3	44/6.6
		5	66/11
		3	88/11
		1	88/33
		1	88/66/11
		1	132/11/6.6
		2	132/66

Source EMM State of Energy Report

Exhibit 2-3 shows the number of customers served by EMM and Eskom within the EMM boundary. EMM serves some 393,677 customers and Eskom some 140 000 customers. Eskom’s consumers are split into small and large power users and key consumers. The key customers consist of:

- Three mines,
- Three smelters,
- Two water pumping stations, and
- One paper mill.

EMM dominates the supply of electricity to households, manufacturing and commercial customers (52% of households other than low usage, 99% of the manufacturing and 90% of the commercial customers in the EMM boundary) while Eskom dominates supply to mining (96%).

**Exhibit 2-3 - Number of Customers by Class**

Customers	Eskom			EMM			Total	
	Number	% of total*	% of split**	Number	% of total*	% of split**	Number	% of total*
Household low usage			15%	138 610	44%	100%	138 610	30%
Household	136 000	97%	48%	150 212	48%	52%	286 212	63%
Agriculture	1 859	1%	34%	3 620	1%	66%	5 479	1%
Mining	27	<1%	96%	1	<1%	4%	28	0%
Manufacturing	22	<1%	1%	3 963	1%	99%	3 985	1%
Commercial	1 640	1%	10%	15 191	5%	90%	16 831	4%
General***				3 801	1%	100%	3 801	1%
Total	139 548	100%	31%	315 398	100%	92%	454 946	100%

Source: EMM State of Energy Report <sup>1</sup>

The total consumption by the different demand sectors is reflected in Exhibit 2-4. It also indicates how the sales are split between EMM and Eskom. The total consumption for the EMM boundary amounts to some 12 435 653 MWh. EMM was responsible for the supply of 8 917 464 MWh (72%) within the EMM boundaries, while Eskom supplied 3 518 189 MWh (28%).

## Exhibit 2-4 - Historical Consumption and By Sector

Graph is Confidential

Customers	Eskom			EMM			Total	
	Sales (MWh)	% of total*	% of split**	Sales (MWh)	% of total*	% of split**	Sales (MWh)	% of total*
Household low usage		0%	0%	971 683	11%	100%	971 683	8%
Household	201 427	6%	8%	2 484 164	28%	92%	2 685 590	22%
Agriculture	119 558	3%	72%	45 844	1%	28%	165 402	1%
Mining	1 008 256	29%	85%	177 682	2%	15%	1 185 938	10%
Manufacturing	2 028 356	58%	31%	4 433 912	50%	69%	6 462 268	52%
Commercial	160 592	5%	22%	558 088	6%	78%	718 680	6%
General***		0%	0%	246 091	3%	100%	246 091	2%
Total	3 518 189	100%	28%	8 917 464	100%	72%	12 435 653	100%

Source: EMM State of Energy Report and 2010/11 Annual Report

It indicates that EMM dominates the electricity supply to all customers except agriculture and mining where Eskom dominates. Manufacturing dominates the consumption profile (52%) followed by households (30%). In terms of consumption, agriculture, mining, transport and general are extremely small.

<sup>1</sup> number of households with low usage supplied by Eskom is accounted for under 'Households'.

Exhibit 2-5 indicates that the average consumption varies from 2 101kWh/month for customers served by Eskom and 2 356kWh/month for customers served by EMM.

### Exhibit 2-6 - Consumption by Class by Month

CUSTOMERS	Eskom	EMM
	kWh/customer/month	kWh/customer/month
Household low usage		584
Household	123	1 378
Agriculture	5 359	1 055
Mining	3 111 901	14 806 853
Manufacturing	7 861 846	93 236
Commercial	8 159	3 062
General*		5 395
Total	2 101	2 356

Source: EMM State of Energy Report

There is significant variation in the amount of energy sold and the respective income per unit of electricity sold in the various municipal distributors, as reflected in Exhibit 2-7. These range from 2% to 23% of the total energy sold for Nigel and Germiston respectively. Germiston and Kempton Park are the largest distributors.

### Exhibit 2-7 - Sales by Geographic Region

Data is Confidential

Source: EMM Presentation, 2012

Non-technical losses also vary significantly by geographic location as presented in Exhibit 2-8. The lower income areas have higher losses. However, these areas are also relatively small in general on total sales basis.

### Exhibit 2-8 (for 2011)

Data is Confidential

Source: EMM Presentation, 2012

The current EMM tariff structure is fairly straightforward with one basic residential , one commercial, and three industrial tariffs. Exhibit 2-9 below provides descriptions of current tariffs. The electricity tariff structure was significantly revised from that which served council over the past 10 years in an attempt to respond effectively to the changing tariff structure of our bulk supplier, as well as our own risk in terms of revenue collection. The proposed project will enhance EMM ability to design more flexible tariffs for each customer group.

### Exhibit 2-9 - EMM Basic Tariffs

<b>Domestic Low</b> (c/kWh) Block1 (0-50 kWh) Block2 (50-350 kWh) Block3 (350- 600 kWh) Block4 (>600kWh)	<b>Domestic High Basic</b> Charge: R/month Amp Charge: R/Amp Energy: c/kWh Block1(0-50 kWh) Block2(50-350 kWh) Block3(350-600 kWh) Block4 (>600kWh)	<b>Commercial Conventional Basic Charge: R/month</b> Amp Charge: R/Amp Energy: c/kWh	<b>Industrial Low Basic Charge:</b> R/month Energy: c/kWh Demand: R/kVA	<b>Industrial High Basic</b> Charge: R/month Energy: c/kWh Demand: R/kVA	<b>Time of Use</b> Tariff Basic Charge: R/month Energy: c/kWh Demand: R/kVA
<b>Domestic – Tariff A – Flat Rate</b> Energy Charge: 80.00	<b>Domestic – Tariff A – IBT</b> Block 1: 60.83 Block 2: 75.09 Block 3: 111.42 Block 4: 122.21 Block 5: 200.00 <b>Domestic Conventional – Tariff B ( Residential &amp; Bulk Residential)</b> Basic Charge: 23.36 Energy Charge: 108.60 <b>Residential Resellers – Tariff B 230/400V</b> Basic Charge: 200.00 Energy Charge: 105.89 <b>Residential Resellers – Tariff B &gt;400V</b> Basic Charge: 2500.00 Energy Charge: 103.17 <b>Domestic – Tariff (H) Single Phase&lt; =80 Amp(230/400V)</b> Basic Charge: 300.00 Energy Charges: <i>High Demand</i> Peak: 416.40 Standard: 133.20 Off- Peak: 80.00 <i>Low Demand</i> Peak: 161.20 Standard: 94.40 Off-Peak: 72.20 <b>Three Phase &lt;= 80 Amp(230/400V)</b> Basic Charge: 900.00 Energy Charges: <i>High Demand</i> Peak: 416.40 Standard: 133.20 Off- Peak: 80.00 <i>Low Demand</i> Peak: 161.20 Standard: 94.40 Off-Peak: 72.20 <b>Three phase -&gt;80 Amp(230/400V)</b> Basic Charge: 1500.00 Energy Charges:	<b>Commercial -Small Business (Tariff A)</b> Basic Charge: 25.47 Energy Charges: High Season: 134.00 Low Season: 134.00 <b>Commercial -Business &amp; Residential-Tariff B</b> Basic Charge: 25.29 Capacity Charge: 7.95 Energy Charges: High Season: 120.31 Low Season: 95.34 <b>Non- Standard Tariffs Residential, business &amp; industrial complexes (Tariff E &lt;= 230/400V</b> Basic Charge: 1121.00 Demand Charge: High Season: 47.90 Low Season: 47.90 Network Access Charge: 29.40 Energy Charges: <i>High Demand</i> Peak: 368.43 Standard: 105.22 Off-Peak: 62.09 <i>Low Demand</i> Peak: 112.03 Standard: 73.55 Off-Peak: 55.20 <b>Residential, business &amp; industrial complexes (Tariff E &lt;= 230/400V Direct from substation</b> Basic/ Charge: 1121.00 Demand Charge: High Season: R47.10 Low Season: R47.10 Network Access Charge: R28.94 Energy Charges: <i>High Demand</i> Peak: 361.84 Standard: 103.40 Off-Peak: 60.95 <i>Low Demand</i> Peak: 110.10 Standard: 72.30 Off-Peak: 54.26 <b>Residential, business &amp; industrial complexes (Tariff E &lt;= 230/400V &amp; &lt;=11kV</b> Basic Charge: 1121.00 Demand Charge: High Season: 46.19 Low Season: 46.19 Network Access Charge: 28.38 Energy Charges: <i>High Demand</i> Peak: 355.30 Standard: 101.47 Off-Peak: 59.82 <i>Low Demand</i> Peak: 108.06 Standard: 70.94 Off-Peak: 53.24 <b>Residential, business &amp; industrial complexes (Tariff E - 11kV</b> Basic Charge: 1780.00 Demand Charge: High Season: 42.78 Low Season: 42.78 Network Access Demand: 26.28 Energy Charges: <i>High Demand</i> Peak: 328.94 Standard: 93.96 Off-Peak: 55.40 <i>Low Demand</i> Peak: 100.05 Standard: 65.69 Off-Peak: 49.30	<b>Industrial (Tariff C – 230/400V)</b> Basic Charge: 1250.00 Demand Charge: High Season: 92.67 Low Season: 77.22 Network Access: 26.87 <i>Energy Charges:</i> High Season: 123.55 Low Season: 74.07 <b>Industrial (Tariff C &lt;= 230/400V direct from substation)</b> Basic Charge: 1250.00 <i>Demand Charge:</i> High Season: 91.01 Low Season: 75.85 Network Access: 26.39 <i>Energy Charges:</i> High Season: 121.34 Low Season: 72.75 <b>Industrial Tariff D 230/400V, Direct from Substation</b> Basic Charge: 1760.00 <i>Demand Charge:</i> High Season: 43.92 Low Season: 43.92 Network Access Charge: R26.35 <i>Energy Charges:</i> <i>High Demand</i> Peak: 267.65 Standard: 93.90 Off-Peak: 56.64 <i>Low Demand</i> Peak: 99.54 Standard: 65.28 ff-Peak: 51.53 <b>Industrial Tariff D Special Contract NCP</b> Basic Charge: 94100.00 Demand Charge: High Season: 23.29 Low Season: R23.29 Network Access Charge: 18.41 Standard Reactive Energy: 10.82 <i>Energy Charges: High Demand</i> Peak: 270.47 Standard: 77.72 Off-Peak: 46.16 <i>Low Demand</i> Peak: 82.73 Standard: 54.58 Off-Peak: 41.16	<b>Industrial (Tariff C - &gt;230/400V &lt; 11 kV)</b> Basic Charge: 1775.00 <i>Demand Charge</i> High Season: 89.35 Low Season: 74.46 Network Access Charge: 25.92 <i>Energy Charge</i> High Season: 119.13 Low Season: 71.43	<b>Industrial (Tariff D &lt;= 230/400V higher than 11kV</b> Basic Charge: 2645.00 <i>Demand Charge</i> High Season: 39.93 Low Season: 39.93 Network Access Charge: 23.95 <i>Energy Charge: High Demand</i> Peak: 243.35 Standard: 85.37 Off- Peak: 51.53 <i>Low Demand</i> Peak: 90.46 Standard: 59.37 Off-Peak: 46.81

Source: NERSA Website 2013

EMM is making efforts to improve its operational efficiencies by implementing new technologies, tools and equipment. The Company has requested USTDA’s technical assistance for conducting feasibility studies for the implementation of Smart Metering technologies.

At present in South Africa, the Distribution Companies’ metering, billing and collection practices are susceptible to the following short-comings:

- Inaccurate Meter Reading Used for Billing – misreading, erroneous estimated readings, falsified readings
- Delays in Billing – billing calculations, bill printing, delivery of bills to customers
- Delay in Collection and Revenue Realization – convenient payment time and location, disputed bills, prompt payment incentives, processing of payments and deposits by Distribution Utilities and Banks
- Unbilled Electricity – un-metered with no charge, un-metered with fixed charge, illegal connections, tampered meters.

As the Distribution Utilities take a new look at developing solutions to their metering, billing and collection problems, consideration must be given to opportunities and challenges in each of the following areas:

- Updating metering practices and other technologies for application in the field

- Reducing un-metered electricity or electricity theft to improve billing practices
- Revising legal, regulatory and tariff structure policies and practices

Distribution Utilities are exploring the introduction of Advanced Metering Infrastructure (AMI, also known as Smart Metering or Smart Grid). AMI involves two-way communications with “smart” meters and other energy management devices. The Distribution Utilities expect that this new technology will:

- (i) include new communication networks and database systems;
- (ii) modernize the electric grid; and
- (iii) provide other important benefits to Distribution Utilities and their customers.

These systems will allow Distribution Utilities to respond more quickly to potential problems and to communicate real-time electricity prices. These price signals provide consumers with financial incentives to reduce their electricity usage at high-cost times of the day, week, or month. In addition, Distribution Utilities can send price signals to “smart” thermostats and “smart” appliances to alert them about an upcoming high-cost period. Based on consumer-determined responses, these smart devices can reduce consumer usage until the high-cost period has ended or shift that usage to lower-cost periods.

AMI, along with new rate designs, will provide consumers the ability to use electricity more efficiently and in turn increase consumer savings while providing Distribution Utilities the ability to detect problems in their system, operate more efficiently and, ultimately, improve reliability.

For Smart Metering, the main objective of this assignment is to investigate the feasibility of the introduction of “smart” meters in EMM system and to develop an implementation plan. A feasibility study will be conducted of a new tariff structure which will allow energy savings for consumers while simultaneously benefiting EMM regarding billing, metering and collection efficiency gains, improved customer service, and reduced energy theft. All available technologies will be reviewed in the context of South Africa and the resources necessary for the system-wide implementation of smart meters, including cost implications, availability of funding and direct and indirect benefits of smart meter installations.

### **2.3 Project Sponsor’s Capabilities and Commitment<sup>1</sup>**

EMM is a municipal company, whose mission is to plan and operate the electricity system to meet the increasing demand for electric energy, provide consumers with

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<sup>1</sup> Draws on EMM Annual Report 2010/11

electric service of high reliability and supply this service with the optimal degrees of efficiency and quality for the most suitable price.

EMM's Energy Department (EED) key performance areas include:

- Revenue services;
- Energy services;
- Planning services;
- Operations and maintenance services; and
- Administrative support services.

The strategic focus of EED is as follows:

- To reduce unplanned interruptions to ensure electricity service reliability;
- To reduce the overall purchases from Eskom to create space for new development (energy efficiency);
- To generate adequate revenue in order to ensure that the whole revenue chain is effective;
- To reduce cable and copper theft;
- To address the reduction of connection backlogs within the funding constraints;
- The roll-out of the solar geyser program;
- To provide street and area lighting; and
- To ensure proper protection of electricity meters.

EED has over 1,000 employees with skilled employees constituting over 70% of the department.

### Exhibit 2-10 - EED Staffing

Function	Professionals		Semi-skilled workers		Senior management		Skilled workers		Top management		Unskilled workers		Grand Total	
	Filled	Vacant	Filled	Vacant	Filled	Vacant	Filled	Vacant	Filled	Vacant	Filled	Vacant	Filled	Vacant
Electricity and Energy Department	43	9	319	70	10	1	345	48	1		290	45	1008	173

Source: EMM Annual Report 2010/11

The first funding agreement for rendering free basic electricity (FBE) in the Eskom supplied areas within Ekurhuleni Metropolitan Municipality was signed on 10 June 2005. The agreement provided for the roll-out of Ekurhuleni funded free units of electricity to all households in the areas supplied by Eskom, as well as the payment of monthly accounts for the free basic electricity rendered by Eskom. The agreement has been extended to 2013 to ensure continuation of this service within our boundaries. The total number of electricity customers receiving free basic electricity in Eskom Supply Areas at this stage is given at approximately 69 000. 100 units of FBE are provided to all Tariff A (IBT) residential customers.

In terms of power quality compliance, which is a NRS 048-2 licence condition, 98% of voltage measurements do not exceed voltage limits of NRS 048-2.

Proper resources and structures are in place to address the problem of cable, copper and electricity theft and approximately R30 million per annum is spent on mitigating this scourge. A comparison of the conductor theft statistics shows the following:

- A decrease of 59% on the number of incidents reported (from an average of 1 104 to 643);
- Over the past 12 months the statistics show an average of 1.7 incidents recorded per day throughout Ekurhuleni. This is less than two incidents per day whereas in the past, Ekurhuleni experienced at least four to five incidents per day;
- A decrease in overall network interference;
- A decrease in value of material stolen;
- A total of 582 perpetrators were arrested in 2008-2010. The conviction rate in court for those arrested was 90%.
- 211 pepper gas systems were installed in substations, 68 cable theft alarms and 11 camera sites;
- More than 33 sites are being guarded including substations, cable sites and newly installed cable sites.

Power interruptions are captured and monitored on a daily basis. The percentage of downtime for electricity services in kWh lost is less than 1% (all wards) and the standards for time taken to restore power outages as determined by NERSA are met by the department.

Various network expansions and strengthening projects are implemented by the department to ensure that well-maintained electricity services are provided to all the areas in the EMM. The implementation of a maintenance-management system in terms of the Asset Refurbishment Strategy ensures that electricity asset-maintenance occurs according to set criteria and intervals.

A sustainable maintenance fund has been set up since 2005, which channels dedicated funding to maintenance and refurbishment work.

A total of 14 900 solar water heaters were installed in areas such as the KwaThema Hostel, Enhlanzeni Hostel, Vosloorus Hostel, Daveyton Hostel, Buhle Park, Rondebult / Roodekop, Villa Lisa, Graceland, Greenfields, Eden Park and Kwenele. The installation of solar water heaters at council-owned housing stock and low-cost housing helps to eradicate energy poverty. It also frees capacity on Eskom's national grid and reduces EMM's requirements by releasing capacity that reduces household

expenditure on purchasing electricity. It lessens the impact on the environment of greenhouse gas emissions and mitigates climate change.

A total of 42 706 energy-efficient lights of varying sizes — from 0.3m to 2.4m for 28W and 36W lighting technology — have been installed at various council buildings. A total of 10 383 street lights were also converted to energy-efficient lights.

#### Exhibit 2-11 – 2011 EMM Activities

Indicator	Unit of Measurement	Target	Actual
<b>Electricity and Energy</b>			
Percentage of downtime for electricity services in kWh lost	% kWh lost (less than)	Less than 0.9%	0.9%
Protective structures / boxes installed	Protective structures installed	3,000	4,949
High mast lights provided	High mast lights provided	70	118
Street lights replaced with efficient luminaries	Energy efficiency	10,000	10,383
Solar geysers installed	Energy efficiency	2,000	7,600
Pre-payment vending – customers not purchasing over a 90-day period – 18 500 meters by-passed	Customers not purchasing over a 90-day period	Reduce by 10%	12,40%
Poles provided with streetlights	Poles provided with streetlights	570	1100
Electricity-supply connections	Number of stands / households	10,000	9,152

Source: EMM Annual Report 2010/11

A project whereby customers on demand metering were migrated to automated meter reading was completed. Close co-operation with an internet metering service provider created a world-class system, which not only suits Ekurhuleni needs, but also provides large customers with invaluable electricity information. This information is used by customers to react to tariff signals and to make visible any abnormal electricity spikes, etc. The automated system provides readings on a 30-minute basis, which means that the city knows exactly what every customer consumes every 30 minutes. Queries are therefore, resolved instantaneously. This in itself secures revenue. Currently, Ekurhuleni is achieving 97.2% accuracy with regard to electricity demand meter readings. The total value of the accounts generated in this method is at about 55% of the total electricity income from sales. Managing large meters in this way removes extreme revenue risk in terms of the failure of meters, possible fraudulent activities around the meter and meter readings, as well as the billing of these accounts.

Automated meter reading and management is key to the proposed project. The introduction of such technology outside currently selected few large customers will permit EMM to manage smaller accounts efficiently and respond to customer needs in expeditious way.

Summary of key capital projects implemented:

Some of the larger projects include upgrading of the Benoni Industries Substation to improve the quality of electricity supply to Benoni South Industries as well as Actonville, Wattville, Tamboville, Benburg Substation, Vorsterskroon Substation and Daveyton Substation to provide capacity for Chief Albert Luthuli Park and Mayfield.

The construction of the 33/6.6kV substation in Palm Ridge has been completed, which will provide additional capacity to the 20 000 residential supply connections (to be completed in 2014 subject to funding) to Palm Ridge.

A total of 9 152 stands have been provided with electricity service connections in areas such as Esselen Park, Winnie Mandela Park, Eden Park, Tinasonke, and Palm Ridge. However, the target of 10 000 connections was not achieved due to delays experienced in the Palm Ridge project.

The Eastgate Substation which is a public private partnership between Ekurhuleni and Liberty Life has been completed and will provide additional capacity for the Eastgate Shopping Centre and further development in the area. Priority will be given to projects aimed at creating upstream supply capacity in line with the Electricity and Energy Department network master plan.

A total of 4 949 meters were protected in the 2010/2011 financial year to reduce vandalism and tampering with electrical equipment. The achievements in the protection of meters can be seen specifically in areas such as Langaville and Geluksdal, where the electrical units sold in the areas have increased dramatically since the introduction of protective structures.

A total of 118 high mast lights were erected, of which 50 were installed specifically in informal settlements, such as Harry Gwala, Lindelani, Madelakufa extensions 1 and 2 and Vusi Musi to address the safety and security needs in these communities. Street lights were mounted on 1 100 poles in Winnie Mandela Park, Esselen Park, Eden Park, Tinsonke and Palm Ridge.

EEM received a grant for the Integrated National Electrification Programme (INEP) from the federal government. The purpose of the grant is to implement the Integrated National Electrification Programme by providing capital subsidies to municipalities to address the electrification backlog of permanently occupied residential dwellings, the installation of bulk infrastructure and the rehabilitation and refurbishment of electricity infrastructure to improve the quality of supply. EMM has completed the following electrification projects funded in the 2010/11 financial year:

- Chief Albert Luthuli Extension 4;
- Winnie Mandela Park phases two and three;

- Esselen Park Extension 1.

Exhibit 2-12 provides the details of EMM targets and achievements for 2010/11. EMM performance is excellent on the achievement of the targets with the exception of a few.

### Exhibit 2-11 – 2011 EMM Targets and Results

Description of target	Year Target	Achieved Target	Comment
Meter protection structures/boxes installed [number of meters protected]	3,000	4,949	✓ Target exceeded
High mast lighting (number of high masts with lighting)	70	118	✓ Target exceeded
Number of poles provided with street lights	570	1100	✓ Target exceeded
Electricity supply connections [no of stands/households supplied]	10,000	9,152	☒ Target partly achieved - see note 1
Percentage of downtime for electricity services [% kWh lost]	less than 0.9%	0.22%	✓ Target exceeded
95% percentage of voltage measurements not to exceed voltage limits of NRS 048-2 [quality compliance (NRS 048-2 license condition)]	95%	98%	✓ Target exceeded
Percentage of arrests leading to conviction [prevent cable and copper theft]	10%	95%	✓ Target exceeded
Power interruptions: NRS 048-3 FII Index: Trf capacity lost + average duration of interruptions improvement (baseline 2007, excl major events) [Forced interruption index NRS 048 - 3 license condition Forced interruption index]	1.5%	13.7%	☒ Target not achieved - see note 2
Number of street lights replaced with efficient luminaires [energy efficiency (Electricity Regulation Act, 2006 – 18 July 2006)]	10,000	10,383	Target exceeded
Energy efficient lights in all EMM buildings – Number of lamps replaced [energy efficiency (Electricity Regulation Act, 2006 – 18 July 2006)]	20,000	42,706	✓ Target exceeded
Smart metering by January 2012 – 1 000 kWh and above [Energy Efficiency (Electricity Regulation Act, 2006 – 18 July 2006)]	0	0	See "other notes" below.
Number of solar geysers installed [energy efficiency (Electricity Regulation Act, 2006 – 18 July 2006)]	2,000	7,600	✓ Target exceeded
Electricity demand meter readings accuracy – 12 monthly figures, averaged over 12 months - baseline of 2 000 meters [12 monthly figures, averaged over 12 months]	95.0%	97.2%	✓ Target exceeded
Prepayment Vending - number of customers not purchasing over a 90 day period - 18 500 meters bypassed [number of customers not purchasing over a 90 day period]	Reduce by 10%	Reduced by 12.4%	✓ Target exceeded
Electricity tariffs implemented	On 1	Implemented	✓ Target achieved

Source: EMM Annual Report 2010/11

Overall, EMM is an experienced Grantee that is capable of handling the management and supervision of the proposed scope of work.

## **2.4 Implementation Financing**

EMM can fund projects by either utilizing its own operating budget or by borrowing money. EMM has a track record of utilizing both funding mechanisms. Smaller projects, which can be considered operational improvements (e.g., replacement of equipment or minor system modifications), are generally funded internally from the O&M and Capital budgets.

Larger capital projects are funded via bond issuances. Long term debt in 2010/11 increased from R2,695 million (~\$306 million) to R3,891 million (~\$442 million). This was as a result of the issuing of the first municipal bond for R815 million (~\$93 million) on 23 July 2010 to fund a portion of the capital infrastructure program for the 2009/10 financial year, as well as a portion of the capital program for the

2010/11 financial year. The bond was issued for a 10 year period at a fixed interest rate of 10,56%. A R4 billion (~\$455 million) Medium Term Domestic Note Programme was registered at the Johannesburg Stock Exchange (of which the R815m was the first issue).

The second EMM bond was issued on 11 March 2011 at an amount of R800 million (~\$91 million). This bond was taken up to finance the remainder of the capital program for the 2010/11 financial year.

The book filled at 185 basis points and the final interest rate was fixed at 10.72%, being the R208 at 8.87% (as at the time of finalizing the book build) + 185 basis points.

Overall, the company has a fairly strong balance sheet as shown in Exhibit 2-12. The balance sheet shows about R51 billion (~ \$5.8 billion) of assets, including R3.8 billion of current assets (~\$432 million). On the liabilities side, the company has over R9.3 billion (~\$1.1 billion).

#### **Exhibit 2-12 - Company Balance Sheet**

Figures in Rand	Note(s)	Economic entity		Controlling entity	
		2011	2010	2011	2010
<b>ASSETS</b>					
<b>Current Assets</b>					
Inventories	12	157,507,473	159,983,121	144,813,919	147,362,841
Other Investments	8	24,110,861	246,305,961	20,000,000	246,305,961
Current tax receivable		-	12,374	-	-
Other receivables from exchange transactions	13	246,409,817	106,595,185	244,692,564	107,275,313
Other receivables from non-exchange transactions	14	130,187,427	163,381,813	130,187,427	163,381,813
Consumer debtors	15	1,780,586,993	1,485,072,121	1,780,586,993	1,485,072,121
Cash and cash equivalents	16	1,431,945,964	704,129,375	1,338,863,442	664,625,409
		<b>3,770,748,535</b>	<b>2,865,479,950</b>	<b>3,659,144,345</b>	<b>2,814,023,458</b>
<b>Non-Current Assets</b>					
Investment property	4	167,399,371	148,810,410	126,279,203	106,717,857
Property, plant and equipment	5	46,986,856,672	47,209,314,670	46,239,742,100	46,455,434,238
Intangible assets	6	33,111,499	26,061,403	31,396,293	24,316,844
Investments in controlled entities	7	-	-	306	306
Other Investments	8	230,895,311	87,995,156	230,895,311	84,670,381
Deferred tax	10	561,879	264,410	-	-
Long-term receivables		2,332,670	27,834,344	2,332,670	27,834,344
		<b>47,421,157,402</b>	<b>47,500,280,393</b>	<b>46,630,645,883</b>	<b>46,698,973,970</b>
<b>Total Assets</b>		<b>51,191,905,937</b>	<b>50,365,760,343</b>	<b>50,289,790,228</b>	<b>49,512,997,428</b>
<b>LIABILITIES</b>					
<b>Current Liabilities</b>					
Current tax payable		124,779	103,867	-	-
Trade and other payables from exchange transactions	21	2,463,693,483	2,354,522,380	2,463,874,079	2,339,237,685
Deposits	22	490,844,219	420,367,012	487,038,111	417,027,259
Unspent conditional grants and receipts	19	144,674,428	211,279,008	133,880,895	200,485,475
Provisions	20	258,199,927	294,806,998	232,612,266	275,420,461
Current portion of other long-term liabilities		1,400,000	-	-	-
Current portion of long-term liabilities	18	194,107,774	434,176,874	175,354,221	419,494,477
		<b>3,553,044,610</b>	<b>3,715,256,139</b>	<b>3,492,759,572</b>	<b>3,651,665,357</b>
<b>Non-Current Liabilities</b>					
Long-term liabilities	18	3,882,194,502	2,446,907,756	3,715,713,955	2,276,068,354
Retirement benefit obligation	11	1,378,112,990	1,281,182,918	1,378,112,990	1,281,182,918
Deferred tax	10	476,157	-	-	-
Provisions	20	506,791,124	453,193,541	503,152,405	450,773,773
Other long term liabilities		4,200,000	24,243,027	-	17,243,027
		<b>5,771,774,773</b>	<b>4,205,527,242</b>	<b>5,596,979,350</b>	<b>4,025,268,072</b>
<b>Total Liabilities</b>		<b>9,324,819,383</b>	<b>7,920,783,381</b>	<b>9,089,738,922</b>	<b>7,676,933,429</b>
<b>Net Assets</b>		<b>41,867,086,554</b>	<b>42,444,976,962</b>	<b>41,200,051,306</b>	<b>41,836,063,999</b>

Source: EMM Annual Report 2010/11

Exhibit 2-13 provides the details of the income statement. Company's revenue in 2011 was over R17 billion (~ \$1.9 billion), with over R10 billion received from service charges (mostly electricity). On the cost side, the expenditures equaled about \$18 billion (~\$ 2 billion) which electricity bulk purchases accounting to about R6 billion. The loss for the year was about R600 million (~\$68 million), which was 3 times less than in the previous year.

## Exhibit 2-13 – Company Income Statement

Figures in Rand	Note(s)	Economic entity		Controlling entity	
		2011	2010	2011	2010
<b>Revenue</b>					
Property rates	25	2,415,577,170	2,129,917,993	2,416,331,522	2,131,999,385
Property rates - penalties and collection charges		62,530,966	71,207,519	62,530,966	71,207,519
Service charges	26	10,525,374,206	8,074,858,086	10,556,594,851	8,105,124,753
Rental of facilities and equipment		68,879,298	67,101,869	49,063,908	48,719,059
Interest earned - outstanding debtors		213,809,407	271,115,244	212,198,108	270,958,631
Fines		135,348,768	97,679,269	135,348,768	97,679,269
Licences and permits		30,049,466	27,662,851	30,049,466	27,662,851
Income from agency services		186,876,573	156,773,259	186,876,573	156,773,259
Government grants & subsidies	27	3,407,484,103	2,885,992,560	3,397,688,308	2,876,826,076
Recoveries		3,098,589	2,105,554	-	-
Rendering of services		7,397,104	5,851,972	-	-
Other income		100,930,949	115,234,552	69,723,590	92,012,250
Interest revenue	32	124,804,681	95,077,164	119,552,608	90,343,076
Dividends received	32	65,577	27,321	-	-
<b>Total Revenue</b>		<b>17,282,226,857</b>	<b>14,000,605,213</b>	<b>17,235,958,668</b>	<b>13,969,306,128</b>
<b>Expenditure</b>					
Employee related costs	29	(4,498,271,587)	(4,094,684,031)	(4,364,281,072)	(3,971,687,008)
Remuneration of councillors	30	(66,908,485)	(62,513,464)	(66,908,485)	(62,513,464)
Administration		(1,197,216)	(1,153,814)	-	-
Debt impairment	31	(1,445,288,730)	(1,425,172,320)	(1,445,304,490)	(1,417,262,543)
Depreciation and amortisation	33	(2,146,209,760)	(2,112,295,513)	(2,114,462,827)	(2,081,909,359)
Repairs and maintenance		(1,167,585,604)	(1,010,671,741)	(1,155,269,966)	(1,004,887,004)
Finance costs	35	(400,036,901)	(326,998,725)	(382,613,438)	(307,457,612)
Bulk purchases	41	(6,182,645,146)	(4,951,102,729)	(6,435,216,842)	(5,150,063,183)
Contracted services	39	(608,143,988)	(557,389,470)	(614,833,794)	(563,519,769)
Grants and subsidies paid	40	(123,792,034)	(57,093,069)	(123,792,034)	(57,093,069)
Impairment of assets	34	(23,001,843)	(357,859)	101,698	(330,955)
Collection costs		(113,016,821)	(74,256,762)	(112,614,930)	(73,529,768)
General Expenses	28	(1,064,185,308)	(873,332,178)	(1,036,873,776)	(842,873,554)
<b>Total Expenditure</b>		<b>(17,840,283,423)</b>	<b>(15,547,021,675)</b>	<b>(17,852,069,956)</b>	<b>(15,533,127,288)</b>
Gain on disposal of assets		4,628,429	34,708,229	4,871,992	34,665,026
Loss on disposal of assets		(25,011,367)	(1,126,471)	(24,773,397)	(926,212)
Taxation	36	(206,566)	(944,210)	-	-
<b>Deficit for the year</b>		<b>(578,646,070)</b>	<b>(1,513,778,914)</b>	<b>(636,012,693)</b>	<b>(1,530,082,346)</b>

Source: EMM Annual Report 2010/11

The Statement of Cash flows is presented in Exhibit 2-14. The Net Cash from Operations is fairly healthy R1.3 billion (~\$150 million) offset by investing activities and increased by financing activities. Net cash at the end of the period is healthy R1.4 billion (~\$160 million).

## Exhibit 2-13 – Company Statement of Cash Flows

Figures in Rand	Note(s)	Economic entity		Controlling entity	
		2011	2010	2011	2010
<b>Cash flows from operating activities</b>					
<b>Receipts</b>					
Property rates		2,078,226,423	1,826,877,056	2,072,674,774	1,826,877,056
Sale of goods and services		9,082,158,990	6,916,197,160	9,055,209,372	6,607,935,122
Grants		3,336,222,562	2,918,078,371	3,331,083,728	2,918,078,371
Interest income		338,614,088	366,192,409	331,750,716	361,301,707
Dividends received		65,577	27,321	-	-
Other receipts		935,024,214	809,099,617	533,593,269	492,884,199
		<b>15,770,311,844</b>	<b>12,836,471,934</b>	<b>15,324,311,859</b>	<b>12,207,076,455</b>
<b>Payments</b>					
Employee costs		(4,653,909,172)	(3,870,765,618)	(4,364,281,071)	(3,864,225,217)
Suppliers		(8,122,407,630)	(6,581,334,412)	(8,078,135,283)	(6,320,217,958)
Finance costs		(400,036,901)	(326,998,725)	(382,613,438)	(307,457,612)
Other payments		(1,250,165,526)	(1,000,906,321)	(1,257,400,382)	(984,935,893)
		<b>(14,426,519,229)</b>	<b>(11,780,005,076)</b>	<b>(14,082,430,174)</b>	<b>(11,476,836,680)</b>
<b>Net cash flows from operating activities</b>	<b>42</b>	<b>1,343,792,615</b>	<b>1,056,466,858</b>	<b>1,241,881,685</b>	<b>730,239,775</b>
<b>Cash flows from investing activities</b>					
Purchase of property, plant and equipment (PPE)	5	(1,961,395,118)	(1,975,067,555)	(1,913,683,900)	(1,927,503,432)
Proceeds from the sale of property, plant and equipment	5	4,887,798	38,603,926	4,499,472	38,600,927
Proceeds from sale of investment property	4	54,000	-	54,000	-
Purchase of intangible assets	6	(12,610,749)	(11,294,402)	(12,369,099)	(9,788,613)
Proceeds from sale of financial assets		80,081,031	27,651,485	80,081,031	14,676,709
Movement in current portion of long term receivables		-	(75,313,338)	-	149,766,772
Net movement in long term receivables - current		-	-	-	37,905,936
Net movement in long term receivables - non-current		25,501,674	(99,236,441)	25,501,674	(99,236,441)
<b>Net cash flows from investing activities</b>		<b>(1,863,481,364)</b>	<b>(2,094,656,325)</b>	<b>(1,815,916,822)</b>	<b>(1,795,578,142)</b>
<b>Cash flows from financing activities</b>					
Movement in long term liabilities		1,439,528,972	607,869,695	1,439,645,601	618,648,261
Movement in deposits		70,759,649	56,612,383	70,010,852	43,873,066
Movement in other long term liabilities		(262,783,283)	(529,253)	(261,383,283)	2,517,001
<b>Net cash flows from financing activities</b>		<b>1,247,505,338</b>	<b>663,952,825</b>	<b>1,248,273,170</b>	<b>665,038,328</b>
<b>Net increase/ (decrease) in cash and cash equivalents</b>		<b>727,816,589</b>	<b>(374,236,642)</b>	<b>674,238,033</b>	<b>(400,300,039)</b>
Cash and cash equivalents at the beginning of the year		704,129,375	1,078,366,017	664,625,409	1,064,925,449
<b>Cash and cash equivalents at the end of the year</b>	<b>16</b>	<b>1,431,945,964</b>	<b>704,129,375</b>	<b>1,338,863,442</b>	<b>664,625,410</b>

Source: EMM Annual Report 2010/11

Some of the financial ratios are presented in the Exhibit 2-14 below. Overall ratios seem fairly healthy for municipal company with significant positive change from 2010 to 2011.

## Exhibit 2-14 – Financial Ratios

	June 2010	June 2011
Cash and Cash Equivalents	664,625,412.18	1,338,863,441.93
Liquidity Ratio	0.73	1.00
Acid Test Ratio	0.69	0.95
Number of day's total cash held (total cash and inv)	30.32	40.50
Number of day's total cash held (operating cash)	14.19	12.16
Number of day's total cash held (un-encumbered cash)	(20.76)	(14.67)
Cost Coverage	0.47	0.40

Source: EMM Annual Report 2010/11

CG is of the opinion that EMM will be able to fund the proposed smart grid project using a combination of its operational budget and cash available from borrowings.

## 2.5 Export Potential

The United States has recently had a modest amount of power-related exports into South Africa. Exhibit 2-15 provides the details of U.S. exports to SA by category. In the last seven years, the volume have tripled to over about \$800 million in 2011.

### Exhibit 2-15 – U.S. Exports to South Africa (\$M)

Item	2005	2006	2007	2008	2009	2010	2011
Burners	1	1	1	2	2	1	1
Combustion Engines	9	14	36	43	18	34	86
Compressors	14	23	26	26	18	28	37
Electric Controls	5	6	8	7	10	15	14
Electric Transmission Equipment	11	20	20	31	31	33	31
Electronic Controls	9	11	9	7	7	7	7
Filters	27	37	44	54	40	61	64
Gas Turbines	9	15	6	8	9	7	7
Generating sets	6	3	4	19	16	3	5
Generators and Motors	10	12	21	22	19	16	47
Heat Pumps	9	9	11	13	11	9	16
Insulators	3	3	4	3	1	1	1
Misc. Parts for Motors, Pumps, Compressors	146	157	234	227	187	206	332
Motors	6	9	11	10	8	9	12
Parts for Generators	3	10	2	16	38	6	10
Parts for Turbines and Engines	16	20	44	30	37	60	56
Pumps	20	29	54	41	36	43	58
Steam Turbines	1	1	1	3	4	37	0
Storage Batteries	5	3	6	14	11	14	14
Wires and Cables	5	7	7	51	46	8	12
<b>TOTAL</b>	<b>312</b>	<b>390</b>	<b>551</b>	<b>629</b>	<b>549</b>	<b>595</b>	<b>809</b>

Source: CG Research and Department of Commerce

The proposed smart meter project targets the installation of metering equipment for as many of the Company's 300,000 existing customers as possible. Given varying customer abilities to pay for such equipment, the government's willingness to subsidize the project, technological implementation abilities, and other factors, CG estimates that the initial smart meter penetration over the first year of 15-25% is conservative based on recent worldwide experience. Given the fairly small customer

base and service territory, it would be reasonable to assume that nearly 100% smart meter penetration can be achieved in three to five years.

The overall estimated project cost (without contingency) is about \$56 million. This estimate is based on the 100% volume assumptions listed above. U.S. exports could reach the \$31 million (55%) level on a probability weighted basis. Exhibit 2-16 shows the approximate breakdown of major equipment costs and the potential share of U.S. exports.

Exhibit 2-16 – Sample Project Budget Estimate and Share of U.S. Exports

<b>Major Equipment/Services</b>	<b>Approximate Total Cost</b>	<b>U.S. Exports (U.S. Competitiveness)</b>
<b>Major Equipment</b>	<b>\$53 million</b>	<b>\$29 million</b>
- Smart Meters (@\$150/ea)	\$45 million	\$22.5 million (good)
- System for data collection and integration	\$6 million	\$6 million (excellent)
- Communications reinforcements	\$2 million	\$0.5 million (fair)
<b>Waste Disposal</b>	<b>\$1 million</b>	<b>\$0 (poor)</b>
<b>Engineering and Design</b>	<b>\$2 million</b>	<b>\$2 million (Excellent)</b>
<b>Total Value (w/o Contingency)</b>	<b>\$56 million</b>	<b>\$31 million</b>

Source: CG Estimate

*Exhibit 2-17 lists a number of U.S. firms that have suitable credentials for the proposed project follow-up procurement.*

**Exhibit 2-17 – U.S. Equipment and Services Suppliers**

<u>Smart Meters:</u>	<u>Software:</u>	<u>Hardware:</u>
<ul style="list-style-type: none"> <li>▪ Itron</li> <li>▪ GE</li> <li>▪ Echelon</li> </ul>	<ul style="list-style-type: none"> <li>▪ IBM</li> <li>▪ Silver Spring Networks</li> <li>▪ Sensus Metering Systems</li> <li>▪ eMeter</li> <li>▪ GridPoint</li> <li>▪ Comverge</li> <li>▪ EnerNOC</li> </ul>	<ul style="list-style-type: none"> <li>▪ IBM</li> <li>▪ SmartSynch</li> <li>▪ CISCO</li> <li>▪ Sensus Metering Systems</li> <li>▪ Comverge</li> <li>▪ Trilliant</li> <li>▪ Tendril</li> </ul>

Source: CG

Individual manufacturer responses are Confidential

**2.6 Foreign Competition and Market Entry Issues**

Foreign companies have been very active in South Africa. CG is aware of past country-wide purchases of electric power equipment from LG (Korea), ABB (Switzerland), Siemens (Germany), Isolux (Spain), Alcatel (Norway), Itochu (Japan).

EMM recent procurement track record indicates purchases of low voltage switchgears, transformers, GIS equipment, and cables.

Past procurement details are Confidential.

The strongest foreign competition is likely to come from European firms, in particular from France, Germany, and Switzerland. Following are the major international providers of smart meters and smart meter support systems:

- ABB, Germany ;
- Siemens, Germany ;
- Landis+Gyr, Switzerland (now part of Itron Group);
- Sagem, France; and
- Elster Group, Germany.

These companies have an extensive track record of supplying smart meters and smart meter solutions to EU member countries and customers worldwide.

## **2.7 Developmental Impact**

This project is supportive of national government objectives to improve grid stability and reliability and minimize electricity costs. According to USDA criteria, the project's potential development impacts include the following:

Infrastructure -- The Project will develop a plan for the implementation of an advanced metering system in Ekurhuleni. Among potential infrastructure improvements are meter replacements, reinforcement of the existing communication infrastructure, construction of new data terminals for storage and processing of load data, and implementation of advanced software systems.

Human Capacity Building -- The proposed metering improvements will create new jobs in installation, maintenance, data collection and integration, analysis, billing, and other areas. At the same time, the project will optimize the meter reading process and may lead to a reduction in the number of manual meter readers. The proposed project will emphasize re-training of meter readers currently serving older meters. Employment opportunities will be available for technical, analytical, construction, and administrative people during the installation and commercial operation phases of the project.

Other - The new meters and metering infrastructure should have some positive environmental benefits including recycling of older meters and reduction of emissions from meter reading operations.

## **2.8 Environmental Impact**

The project is expected to have a positive effect on the environment. Currently, metering infrastructure is only used for billing.

Among the anticipated positive impacts are the following:

- Air emission reductions due to less meter reading;
- Ability to implement time-of-use tariffs leads to more efficient power generation;
- Ability to implement time-of-use tariffs leads to more efficient water consumption;
- Training on environmental issues will be provided to locals;
- Life quality improvement for local communities due to new income; and
- Social commitment regarding education, health and production of goods.

Potential negative impacts include the following:

- Potential environmental issues with old meter removal;
- Old meter disposal;
- Sound pollution during construction; and
- Equipment transit during construction.

## **2.9 Impact on U.S. Labor**

CG anticipates no negative impacts on U.S. employment due to this project. The project would provide planning guidance for the electric smart metering system and not products that could be imported into the U.S. On the other hand, positive impacts will result in the event U.S. exporters succeed in obtaining contracts to provide equipment and services when the project goes forward, and this could conceivably serve as a catalyst for further projects in the region.

No adverse impact is expected from the execution of the proposed project. Its significant export potential would assure the bulk of the production of major goods

in the U.S. and their export to the host country. No significant permanent new job creation impacting U.S. jobs is expected outside the U.S.

### **2.11 Justification**

The proposed advanced metering system project will have the following major benefits:

- Implement a large scale advanced metering system;
- Reduce non-payments while maintaining a basic level of social assistance;
- Reduce distribution losses; and
- Assist in electricity generation optimization.

The proposed project clearly satisfies USTDA funding criteria:

- The Project Sponsor is willing to provide “equal access” to U.S. firms in procurement resulting from this project;
- The amount of post-project procurement should be significantly higher than study funding. The estimate for U.S. exports is about \$31 million;
- The project is clearly a priority for the country and will be viewed favorably by the U.S. Embassy; and
- The proposed project shall assist U.S. companies facing significant competition from EU and other regional competitors.

### **2.13 Budget and Schedule**

The proposed project implementation schedule is presented in Exhibit 2-18 below. The duration of the total effort is estimated at 9 months with most of the tasks being accomplished sequentially. The Final Report issuance is expected in 9 months since notice to proceed.

#### **Exhibit 2-18 – Project Schedule**

No.	Task Name	Duration (days)	Months									
			1	2	3	4	5	6	7	8	9	
1	Existing Distribution System Analysis	45	█									
2	Stakeholder Consultations	2		█								
3	Smart Grid Technologies Review	20		█								
4	Smart Grid Maturity Assessment	15			█							
5	Preparation of Smart Grid Implementation Roadmap	30			█							
6	Smart Grid Pilot Project Preparation	30				█						
7	Pilot Implementation and Integration Program Preparation	25					█					
8	Pilot Economic Analysis	10						█				
9	Pilot Financing Mechanism Analysis	10							█			
10	Pilot Environmental and Social/Development Impact Assessment	10								█		
11	Pilot Legal, Regulatory, and Institutional Review	5									█	
12	Draft Final and Final Report Preparation and Presentation	25									█	█

The recommended feasibility study budget is provided below in Exhibit 2-19. A detailed break down by task and discipline is provided for labor. The total budget for this project is estimated to be \$693,345.

## Exhibit 2-19 – Feasibility Study Budget

### DIRECT LABOR COSTS:

TOR Task	TOR Task Name (per Section L of application)	Contractor Labor	TOTAL COST		
			Total Person (Days)	x Daily Rate* =	
1	Existing Distribution System Analysis	Project Manager	16.00	\$ 1,575.00	\$ 25,200.00
		Senior Power Specialist(s)	12.00	\$ 1,390.00	\$ 16,680.00
		Senior Discipline Engineer(s)	20.00	\$ 1,390.00	\$ 27,800.00
		Economics/Finance Specialist	12.00	\$ 1,100.00	\$ 13,200.00
		Legal/Development Specialist	7.00	\$ 1,390.00	\$ 9,730.00
		Estimating/Planning Specialist(s)	7.00	\$ 1,100.00	\$ 7,700.00
		Junior Engineer/Specialist	20.00	\$ 700.00	\$ 14,000.00
		Administrative	5.00	\$ 465.00	\$ 2,325.00
		<b>TOTALS</b>	<b>96.00</b>	<b>\$</b>	<b>\$ 115,060.00</b>
		2	Stakeholder Consultations	Project Manager	3.00
Senior Power Specialist(s)	3.00			\$ 1,390.00	\$ 4,170.00
Senior Discipline Engineer(s)	3.00			\$ 1,390.00	\$ 4,170.00
Economics/Finance Specialist	3.00			\$ 1,100.00	\$ 3,300.00
Legal/Development Specialist	3.00			\$ 1,390.00	\$ 4,170.00
Estimating/Planning Specialist(s)	2.00			\$ 1,100.00	\$ 2,200.00
Junior Engineer/Specialist	7.00			\$ 700.00	\$ 4,900.00
Administrative	1.00			\$ 465.00	\$ 465.00
<b>TOTALS</b>	<b>25.00</b>			<b>\$</b>	<b>\$ 28,100.00</b>
3	Smart Grid Technologies Review			Project Manager	10.00
		Senior Power Specialist(s)	10.00	\$ 1,390.00	\$ 13,900.00
		Senior Discipline Engineer(s)	10.00	\$ 1,390.00	\$ 13,900.00
		Economics/Finance Specialist	5.00	\$ 1,100.00	\$ 5,500.00
		Legal/Development Specialist	2.00	\$ 1,390.00	\$ 2,780.00
		Estimating/Planning Specialist(s)	10.00	\$ 1,100.00	\$ 11,000.00
		Junior Engineer/Specialist	15.00	\$ 700.00	\$ 10,500.00
		Administrative	2.00	\$ 465.00	\$ 930.00
		<b>TOTALS</b>	<b>64.00</b>	<b>\$</b>	<b>\$ 74,260.00</b>
		4	Smart Grid Maturity Assessment	Project Manager	5.00
Senior Power Specialist(s)	10.00			\$ 1,390.00	\$ 13,900.00
Senior Discipline Engineer(s)	12.00			\$ 1,390.00	\$ 16,680.00
Economics/Finance Specialist	1.00			\$ 1,100.00	\$ 1,100.00
Legal/Development Specialist	1.00			\$ 1,390.00	\$ 1,390.00
Estimating/Planning Specialist(s)	5.00			\$ 1,100.00	\$ 5,500.00
Junior Engineer/Specialist	10.00			\$ 700.00	\$ 7,000.00
Administrative	1.00			\$ 465.00	\$ 465.00
<b>TOTALS</b>	<b>45.00</b>			<b>\$</b>	<b>\$ 53,910.00</b>
5	Preparation of Smart Grid Implementation Roadmap			Project Manager	10.00
		Senior Power Specialist(s)	15.00	\$ 1,390.00	\$ 20,850.00
		Senior Discipline Engineer(s)	15.00	\$ 1,390.00	\$ 20,850.00
		Economics/Finance Specialist	2.00	\$ 1,100.00	\$ 2,200.00
		Legal/Development Specialist	2.00	\$ 1,390.00	\$ 2,780.00
		Estimating/Planning Specialist(s)	8.00	\$ 1,100.00	\$ 8,800.00
		Junior Engineer/Specialist	8.00	\$ 700.00	\$ 5,600.00
		Administrative	2.00	\$ 465.00	\$ 930.00
		<b>TOTALS</b>	<b>62.00</b>	<b>\$</b>	<b>\$ 77,760.00</b>
		6	Smart Grid Pilot Project Preparation	Project Manager	8.00
Senior Power Specialist(s)	10.00			\$ 1,390.00	\$ 13,900.00
Senior Discipline Engineer(s)	10.00			\$ 1,390.00	\$ 13,900.00
Economics/Finance Specialist	5.00			\$ 1,100.00	\$ 5,500.00
Legal/Development Specialist	2.00			\$ 1,390.00	\$ 2,780.00
Estimating/Planning Specialist(s)	2.00			\$ 1,100.00	\$ 2,200.00
Junior Engineer/Specialist	10.00			\$ 700.00	\$ 7,000.00
Administrative	1.00			\$ 465.00	\$ 465.00
<b>TOTALS</b>	<b>45.00</b>			<b>\$</b>	<b>\$ 53,620.00</b>
7	Pilot Implementation and Integration Program Preparation			Project Manager	8.00
		Senior Power Specialist(s)	5.00	\$ 1,390.00	\$ 6,950.00
		Senior Discipline Engineer(s)	15.00	\$ 1,390.00	\$ 20,850.00
		Economics/Finance Specialist	2.00	\$ 1,100.00	\$ 2,200.00
		Legal/Development Specialist	2.00	\$ 1,390.00	\$ 2,780.00
		Estimating/Planning Specialist(s)	5.00	\$ 1,100.00	\$ 5,500.00
		Junior Engineer/Specialist	5.00	\$ 700.00	\$ 3,500.00
		Administrative	1.00	\$ 465.00	\$ 465.00
		<b>TOTALS</b>	<b>46.00</b>	<b>\$</b>	<b>\$ 50,120.00</b>
		8	Pilot Economic Analysis	Project Manager	5.00
Senior Power Specialist(s)	2.00			\$ 1,390.00	\$ 2,780.00
Senior Discipline Engineer(s)	5.00			\$ 1,390.00	\$ 6,950.00
Economics/Finance Specialist	10.00			\$ 1,100.00	\$ 11,000.00
Legal/Development Specialist	2.00			\$ 1,390.00	\$ 2,780.00
Estimating/Planning Specialist(s)	5.00			\$ 1,100.00	\$ 5,500.00
Junior Engineer/Specialist	5.00			\$ 700.00	\$ 3,500.00
Administrative	1.00			\$ 465.00	\$ 465.00
<b>TOTALS</b>	<b>35.00</b>			<b>\$</b>	<b>\$ 40,890.00</b>
9	Pilot Financing Mechanism Analysis			Project Manager	2.00
		Senior Power Specialist(s)	2.00	\$ 1,390.00	\$ 2,780.00
		Senior Discipline Engineer(s)	2.00	\$ 1,390.00	\$ 2,780.00
		Economics/Finance Specialist	7.00	\$ 1,100.00	\$ 7,700.00
		Legal/Development Specialist	2.00	\$ 1,390.00	\$ 2,780.00
		Estimating/Planning Specialist(s)	2.00	\$ 1,100.00	\$ 2,200.00
		Junior Engineer/Specialist	5.00	\$ 700.00	\$ 3,500.00
		Administrative	1.00	\$ 465.00	\$ 465.00
		<b>TOTALS</b>	<b>23.00</b>	<b>\$</b>	<b>\$ 25,355.00</b>



## **2.14 Recommendations**

Constant Group has reviewed the data and analytics that were provided for this project. **Constant Group recommends USTDA to further support this project by providing funding for the feasibility study.** The following items represent the positive features of the project:

- Grantee has the capabilities to implement the project subject to positive findings of the feasibility study task
- A considerable amount of related preparatory work has been performed under the USTDA-funded DM and Company Development Plan.
- The project is very consistent with government objectives related to grid reliability and loss reduction.
- Project has significant positive impacts on the development side, including technology transfer, human development, increased employment, pollution reduction, and others.
- Technology and services providers will be interested in providing exports from the U.S. for this project.
- EMM conducts full international competitive tenders for the equipment and services purchases.

Following are the risks of the proposed project:

- The proposed study task may uncover issues that are inconsistent with current major assumptions.
- As with any development project, there are no guarantees concerning the project implementation, commencement and/or completion.
- U.S. technology and services providers may not be successful in obtaining procurement contracts.
- The ability to finance this project depends on the results of the feasibility project and company financial planning.
- Selection of smart meter standards may influence the origin of the major equipment. Several U.S. manufacturers can produce EU standard equipment in the U.S., but may prefer to do that within overseas subsidiaries due to economic and/or logistic reasons.

Overall, Constant Group is of the opinion that the potential benefits of this project outweigh the risks.

## ANNEX 3



**U.S. TRADE AND DEVELOPMENT AGENCY  
Arlington, VA 22209-2131**

**NATIONALITY, SOURCE, AND ORIGIN REQUIREMENTS**

The purpose of USTDA's nationality, source, and origin requirements is to assure the maximum practicable participation of American contractors, technology, equipment and materials in the prefeasibility, feasibility, and implementation stages of a project.

**USTDA STANDARD RULE (GRANT AGREEMENT STANDARD LANGUAGE):**

Except as USTDA may otherwise agree, each of the following provisions shall apply to the delivery of goods and services funded by USTDA under this Grant Agreement: (a) for professional services, the Contractor must be either a U.S. firm or U.S. individual; (b) the Contractor may use U.S. subcontractors without limitation, but the use of subcontractors from host country may not exceed twenty percent (20%) of the USTDA Grant amount and may only be used for specific services from the Terms of Reference identified in the subcontract; (c) employees of U.S. Contractor or U.S. subcontractor firms responsible for professional services shall be U.S. citizens or non-U.S. citizens lawfully admitted for permanent residence in the U.S.; (d) goods purchased for implementation of the Study and associated delivery services (e.g., international transportation and insurance) must have their nationality, source and origin in the United States; and (e) goods and services incidental to Study support (e.g., local lodging, food, and transportation) in host country are not subject to the above restrictions. USTDA will make available further details concerning these standards of eligibility upon request.

**NATIONALITY:**

1) Rule

Except as USTDA may otherwise agree, the Contractor for USTDA funded activities must be either a U.S. firm or a U.S. individual. Prime contractors may utilize U.S.

subcontractors without limitation, but the use of host country subcontractors is limited to 20% of the USTDA grant amount.

## 2) Application

Accordingly, only a U.S. firm or U.S. individual may submit proposals on USTDA funded activities. Although those proposals may include subcontracting arrangements with host country firms or individuals for up to 20% of the USTDA grant amount, they may not include subcontracts with third country entities. U.S. firms submitting proposals must ensure that the professional services funded by the USTDA grant, to the extent not subcontracted to host country entities, are supplied by employees of the firm or employees of U.S. subcontractor firms who are U.S. individuals.

Interested U.S. firms and consultants who submit proposals must meet USTDA nationality requirements as of the due date for the submission of proposals and, if selected, must continue to meet such requirements throughout the duration of the USTDA-financed activity. These nationality provisions apply to whatever portion of the Terms of Reference is funded with the USTDA grant.

## 3) Definitions

A "U.S. individual" is (a) a U.S. citizen, or (b) a non-U.S. citizen lawfully admitted for permanent residence in the U.S. (a green card holder).

A "U.S. firm" is a privately owned firm which is incorporated in the U.S., with its principal place of business in the U.S., and which is either (a) more than 50% owned by U.S. individuals, or (b) has been incorporated in the U.S. for more than three (3) years prior to the issuance date of the request for proposals; has performed similar services in the U.S. for that three (3) year period; employs U.S. citizens in more than half of its permanent full-time positions in the U.S.; and has the existing capability in the U.S. to perform the work in question.

A partnership, organized in the U.S. with its principal place of business in the U.S., may also qualify as a "U.S. firm" as would a joint venture organized or incorporated in the United States consisting entirely of U.S. firms and/or U.S. individuals.

A nonprofit organization, such as an educational institution, foundation, or association may also qualify as a "U.S. firm" if it is incorporated in the United States and managed by a governing body, a majority of whose members are U.S. individuals.

## **SOURCE AND ORIGIN:**

### 1) Rule

In addition to the nationality requirement stated above, any goods (e.g., equipment and materials) and services related to their shipment (e.g., international transportation and insurance) funded under the USTDA Grant Agreement must have their source and origin in the United States, unless USTDA otherwise agrees. However, necessary purchases of goods and project support services which are unavailable from a U.S. source (e.g., local food, housing and transportation) are eligible without specific USTDA approval.

### 2) Application

Accordingly, the prime contractor must be able to demonstrate that all goods and services purchased in the host country to carry out the Terms of Reference for a USTDA Grant Agreement that were not of U.S. source and origin were unavailable in the United States.

### 3) Definitions

“Source” means the country from which shipment is made.

"Origin" means the place of production, through manufacturing, assembly or otherwise.

*Questions regarding these nationality, source and origin requirements may be addressed to the USTDA Office of General Counsel.*

## ANNEX 4

## **GRANT AGREEMENT**

This Grant Agreement is entered into between the Government of the United States of America, acting through the U.S. Trade and Development Agency ("USTDA") and Ekurhuleni Metropolitan Municipality ("Grantee"). USTDA agrees to provide the Grantee under the terms of this Grant Agreement US\$695,000 ("USTDA Grant") to fund the cost of goods and services required for a feasibility study ("Study") on the proposed Ekurhuleni Smart Metering ("Project") in South Africa ("Host Country").

### **1. USTDA Funding**

The funding to be provided under this Grant Agreement shall be used to fund the costs of a contract between the Grantee and the U.S. firm selected by the Grantee ("Contractor") under which the Contractor will perform the Study ("Contract"). Payment to the Contractor will be made directly by USTDA on behalf of the Grantee with the USTDA Grant funds provided under this Grant Agreement.

### **2. Terms of Reference**

The Terms of Reference for the Study ("Terms of Reference") are attached as Annex I and are hereby made a part of this Grant Agreement. The Study will examine the technical, financial, environmental, and other critical aspects of the proposed Project. The Terms of Reference for the Study shall also be included in the Contract.

### **3. Standards of Conduct**

USTDA and the Grantee recognize the existence of standards of conduct for public officials and commercial entities in their respective countries. Therefore, USTDA, the Grantee, and the Contractor shall not directly or indirectly provide, offer or promise to provide money or anything of value to any public official in violation of any United States or Host Country laws relating to corruption or bribery.

### **4. Grantee Responsibilities**

The Grantee shall undertake its best efforts to provide reasonable support for the Contractor, such as local transportation, office space, and secretarial support.

### **5. Contract Matters and USTDA's Rights as Financier**

#### **(A) Grantee Competitive Selection Procedures**

Selection of the U.S. Contractor shall be carried out by the Grantee according to its established procedures for the competitive selection of contractors with advance notice of the procurement published online through *Federal Business Opportunities*

([www.fedbizopps.gov](http://www.fedbizopps.gov)). Upon request, the Grantee will submit these contracting procedures and related documents to USTDA for information and/or approval.

**(B) USTDA's Right to Approve Contractor Selection**

The Grantee shall notify USTDA at the address of record set forth in Article 16 below upon selection of the Contractor to perform the Study. USTDA then shall notify the Grantee whether or not USTDA approves the Grantee's Contractor selection. Upon USTDA approval of the Grantee's Contractor selection, the Grantee shall notify in writing the U.S. firms that submitted unsuccessful proposals to perform the Study that they were not selected. The Grantee and the Contractor then shall enter into a contract for performance of the Study.

**(C) USTDA's Right to Approve Contract Between Grantee and Contractor**

**(1) Contract**

The Grantee and the Contractor shall enter into a contract for performance of the Study. The Grantee (or the Contractor on the Grantee's behalf) shall transmit to USTDA, at the address set forth in Article 16 below, a photocopy of an English language version of the signed contract or a final negotiated draft version of the contract. USTDA then shall notify the Grantee and the Contractor whether or not USTDA approves the contract.

**(2) Amendments and Assignments**

The Grantee or the Contractor may submit any proposed amendment to the contract, including any proposed amendment to any annex thereto, or any proposed assignment of the contract, to USTDA at the address set forth in Article 16 below. USTDA then shall notify the Grantee and the Contractor whether or not USTDA approves the proposed amendment or assignment.

**(D) USTDA Not a Party to the Contract**

It is understood by the parties that USTDA has reserved certain rights such as, but not limited to, the right to approve the terms of the contract and any amendments thereto, including assignments, the selection of all contractors, the Terms of Reference, the Final Report, and any and all documents related to any contract funded under the Grant Agreement. The parties hereto further understand and agree that USTDA, in reserving any or all of the foregoing approval rights, has acted solely as a financing entity to assure the proper use of United States Government funds, and that any decision by USTDA to exercise or refrain from exercising these approval rights shall be made as a financier in the course of funding the Study and shall not be construed as making USTDA a party to the contract. The parties hereto understand and agree that USTDA may, from time to time, exercise the foregoing approval rights, or discuss matters related to these rights and the Project with the parties to the contract or any subcontract, jointly or separately, without thereby incurring any responsibility or liability to such parties. Any approval or failure to approve by USTDA shall not bar the Grantee or USTDA from asserting any right they might have against the

Contractor, or relieve the Contractor of any liability which the Contractor might otherwise have to the Grantee or USTDA.

**(E) Grant Agreement Controlling**

Regardless of USTDA approval, the rights and obligations of any party to the contract or any subcontract thereunder must be consistent with this Grant Agreement. In the event of any inconsistency between the Grant Agreement and the contract or any subcontract funded by the Grant Agreement, the Grant Agreement shall control.

**6. Disbursement Procedures**

**(A) USTDA Approval of Contract Required**

USTDA will make disbursements of Grant funds directly to the Contractor only after USTDA approves the Grantee's contract with the Contractor.

**(B) Contractor Invoice Requirements**

The Grantee should request disbursement of funds by USTDA to the Contractor for performance of the Study by submitting invoices in accordance with the procedures set forth in the USTDA Mandatory Clauses in Annex II.

**7. Effective Date**

The effective date of this Grant Agreement ("Effective Date") shall be the date of signature by both parties or, if the parties sign on different dates, the date of the last signature. In the event that only one signature is dated, such date shall constitute the Effective Date.

**8. Study Schedule**

**(A) Study Completion Date**

The completion date for the Study, which is March 31, 2014, is the date by which the parties estimate that the Study will have been completed.

**(B) Time Limitation on Disbursement of USTDA Grant Funds**

Except as USTDA may otherwise agree, (i) no USTDA funds may be disbursed under this Grant Agreement for goods and services which are provided prior to the Effective Date of the Grant Agreement; and (ii) no USTDA funds may be disbursed more than four (4) years after the Effective Date of the Grant Agreement.

## **9. USTDA Mandatory Contract Clauses**

All contracts funded under this Grant Agreement shall include the USTDA Mandatory Contract Clauses set forth in Annex II to this Grant Agreement. All subcontracts funded or partially funded with USTDA Grant funds shall include the USTDA Mandatory Contract Clauses, except for clauses B(1), G, H, I, and J.

## **10. Use of U.S. Carriers**

### **(A) Air**

Transportation by air of persons or property funded under this Grant Agreement shall be on U.S. flag carriers in accordance with the Fly America Act, 49 U.S.C. 40118, to the extent service by such carriers is available, as provided under applicable U.S. Government regulations.

### **(B) Marine**

Transportation by sea of property funded under this Grant Agreement shall be on U.S. carriers in accordance with U.S. cargo preference law.

## **11. Nationality, Source and Origin**

Except as USTDA may otherwise agree, the following provisions shall govern the delivery of goods and professional services funded by USTDA under this Grant Agreement:

- (a) the Contractor must be a U.S. firm;
- (b) the Contractor may use U.S. subcontractors without limitation;
- (c) employees of U.S. Contractor or U.S. subcontractor firms shall be U.S. citizens or non-U.S. citizens lawfully admitted for permanent residence in the United States, except as provided pursuant to subpart (d) below;
- (d) up to twenty percent (20%) of the USTDA Grant amount may be used to pay for services performed by (i) Host Country subcontractors, and/or (ii) Host Country nationals who are employees of the Contractor;
- (e) a Host Country subcontractor may only be used for specific services from the Terms of Reference identified in the subcontract;
- (f) subcontractors from countries other than the United States or Host Country may not be used;
- (g) goods purchased for performance of the Study and associated delivery services (e.g., international transportation and insurance) must have their nationality, source and origin in the United States; and

(h) goods and services incidental to Study support (e.g., local lodging, food, and transportation) in Host Country are not subject to the above restrictions.

USTDA will make available further details concerning these provisions upon request.

## **12. Taxes**

USTDA funds provided under this Grant Agreement shall not be used to pay any taxes, tariffs, duties, fees or other levies imposed under laws in effect in Host Country, except for taxes of a de minimis nature imposed on local lodging, food, transportation, or airport arrivals or departures. Neither the Grantee nor the Contractor will seek reimbursement from USTDA for taxes, tariffs, duties, fees or other levies, except for taxes of a de minimis nature referenced above.

## **13. USTDA Project Evaluation**

The parties will cooperate to assure that the purposes of the Grant Agreement are accomplished. For five (5) years following receipt by USTDA of the Final Report, the Grantee agrees to respond to any reasonable inquiries from USTDA about the status of the Project. Inquiries will include, but not be limited to, whether the Final Report recommendations have been or will be used to implement the Project, anticipated Project implementation timeline, and likely source of financing. In addition, the Grantee agrees to notify USTDA any time the Grantee selects a new primary contact person for this Project during the five-year period referenced above.

## **14. Recordkeeping and Audit**

The Grantee agrees to maintain books, records, and other documents relating to the Study and this Grant Agreement adequate to demonstrate implementation of its responsibilities under this Grant Agreement, including the selection of contractors, receipt and approval of contract deliverables, and approval or disapproval of contractor invoices for payment by USTDA. Such books, records, and other documents shall be separately maintained for three (3) years after the date of the final disbursement by USTDA. The Grantee shall afford USTDA or its authorized representatives the opportunity at reasonable times to review books, records, and other documents relating to the Study and the Grant Agreement.

## **15. Representation of Parties**

For all purposes relevant to this Grant Agreement, the Government of the United States of America will be represented by the U. S. Ambassador to Host Country or USTDA and Grantee will be represented by its City Manager. The parties hereto may, by written notice, designate additional representatives for all purposes under this Grant Agreement.

## 16. Addresses of Record for Parties

Any notice, request, document, or other communication submitted by either party to the other under the Grant Agreement shall be in writing or through an electronic medium that produces a tangible record of the transmission, such as a facsimile or e-mail message, and will be deemed duly given or sent when delivered to such party at the following:

To: Ekurhuleni Metropolitan Municipality  
Boksburg Customer Care Building  
c/o Trichardt and Market Streets  
Boksburg, South Africa

Phone: +27 11 999 5692  
Fax: +27 11 917 6112  
E-Mail: mark.wilson@ekurhuleni.gov.za

To: U.S. Trade and Development Agency  
1000 Wilson Boulevard, Suite 1600  
Arlington, Virginia 22209-3901  
USA

Phone: (703) 875-4357  
Fax: (703) 875-4009  
E-Mail: grantnotices@ustda.gov and  
africa@ustda.gov

All such communications shall be in English, unless the parties otherwise agree in writing. In addition, the Grantee shall provide the Commercial or Economic Section of the U.S. Embassy in Host Country with a copy of each communication sent to USTDA.

Any communication relating to this Grant Agreement shall include the following fiscal data:

Appropriation No.: 11 13/14 1001  
Activity No.: 2013-11009A  
Reservation No.: 2013123  
Grant No.: GH201311123

## 17. Implementation Letters

To assist the Grantee in the implementation of the Study, USTDA may, from time to time, issue implementation letters that will provide additional information about matters covered by this Grant Agreement. USTDA may also issue implementation letters to (i) extend the estimated completion date set forth in Article 8(A) above, or (ii) change the fiscal data set forth in Article 16 above. The parties may also use jointly agreed upon implementation letters to confirm and record their mutual understanding of matters covered by this Grant Agreement.

## **18. Grant Agreement Amendments**

Either party may submit to the other party at any time a proposed amendment to the Grant Agreement. A Grant Agreement amendment shall be effective only if it has been signed by both parties.

## **19. Termination Clause**

Either party may terminate this Grant Agreement by giving the other party written notice thereof. The termination of the Grant Agreement will end any obligations of the parties to provide financial or other resources for the Study, except for payments that may be made pursuant to Clause I of the USTDA Mandatory Contract Clauses set forth in Annex II to this Grant Agreement. This article and Articles 5, 12, 13, 14, and 21 of the Grant Agreement shall survive termination of the Grant Agreement.

## **20. Non-waiver of Rights and Remedies**

No delay in exercising any right or remedy accruing to either party in connection with the Grant Agreement shall be construed as a waiver of such right or remedy.

## **21. U.S. Technology and Equipment**

By funding this Study, USTDA seeks to promote the project objectives of the Host Country through the use of U.S. technology, goods, and services. In recognition of this purpose, the Grantee agrees that it will allow U.S. suppliers to compete in the procurement of technology, goods and services needed for Project implementation.

## **22. Governing Law**

This Grant Agreement shall be governed by, and construed in accordance with, the applicable laws of the United States of America. In the absence of federal law, the laws of the State of New York shall apply.

## **23. Counterparts**

This Grant Agreement may be executed in counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same agreement. Counterparts may be delivered via electronic mail or other transmission method and any counterpart so delivered shall be deemed to be valid and effective for all purposes.

**[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK]**

IN WITNESS WHEREOF, the Government of the United States of America and Ekurhuleni Metropolitan Municipality, each acting through its duly authorized representative, have caused this Grant Agreement to be signed in the English language in their names and delivered as of the day and year written below. In the event that this Grant Agreement is signed in more than one language, the English language version shall govern.

For the Government of the United States of America

For Ekurhuleni Metropolitan Municipality

By: CE Miller  
EARL MILLER, US CONSUL  
GENERAL

By: K. NAEJWA CITY MANAGER

Date: 27.3.13

Date: 27.03.13

Witnessed:

Witnessed:

By: \_\_\_\_\_

By: \_\_\_\_\_

Annex I -- Terms of Reference

Annex II -- USTDA Mandatory Clauses

## Annex I

### **Terms of Reference**

Ekurhuleni Metropolitan Municipality (“Grantee”) has requested funding from the U.S. Trade and Development Agency (“USTDA”) for a feasibility study (“Study”) to evaluate the technical, financial, and other critical aspects of the proposed Ekurhuleni Smart Metering project (“Project”) in South Africa. In particular, the Study will evaluate the feasibility of implementing advanced metering infrastructure in Ekurhuleni, South Africa. The Study will also include the development of a smart metering implementation roadmap and the design of a smart metering pilot project (“Pilot”). The primary objective of the Study is to provide the Grantee with analyses and recommendations that will support its decision-making with regard to the implementation of the Project.

#### **Task 1: Existing Electricity Distribution System Analysis**

The Contractor shall analyze the Grantee’s existing electricity distribution systems, at a minimum including the following technical and financial aspects:

##### Technical Aspects

- System layout (at a minimum including bulk purchase points, metering, major substations, and line voltages)
- Customer data (by class and type of metering)
- Hourly demand curves
- Existing information technology (“IT”) systems (such as metering, billing and collections systems, geographic information systems (“GIS”), supervisory, control and data acquisition (“SCADA”) systems, asset management systems, real time data management systems, emergency management systems, outage management system (“OMS”), customer information/complaints system (“CIS”), etc.)
- Loss statistics and root cause analysis for major categories
- Customer service performance and customer service satisfaction

##### Financial Aspects

- Bulk purchases
- Existing and future tariffs
- Revenue distribution by geography and customer classes
- Financial evaluation of technical and non-technical losses
- Cost budgeting process review and detailed allocation of costs for 2013-2014, as well as high-level 5-year cost allocation summary

Once the Contractor has collected and analyzed the technical and financial aspects of the Grantee’s existing electricity distribution system, the Contractor shall prepare a baseline report that outlines the existing state of Grantee’s existing electricity distribution system. In addition to containing all relevant information pertaining to the technical and financial performance of the Grantee’s existing electricity distribution system, the baseline report

shall also take into account relevant factors, such as environmental, societal, shareholder interests, etc.

**Task 1 Deliverable:** The Contractor shall provide the Grantee with all work performed pursuant to Task 1.

## **Task 2: Stakeholder Consultations**

In consultation with the Grantee, the Contractor shall identify key stakeholders for the development of Ekurhuleni's electricity distribution sector, such as relevant departments within the municipal government, Eskom, the National Energy Regulator of South Africa, the South African National Energy Development Institute, the South African Department of Energy, business associations, customer advocacy groups, etc.

The Contractor shall organize a roundtable meeting with the key stakeholders identified above. The meeting shall take place at the Grantee's facilities or at another appropriate venue agreed upon by the Contractor and the Grantee, such venue to be provided at the Grantee's cost. During the roundtable meeting, the Contractor shall: introduce the Contractor's Study team; review the tasks to be performed under these Terms of Reference; review the Contractor's work plan for completing the Study; review the existing state of Grantee's existing electricity distribution system; and identify and discuss the objectives of the Study and the Project. During the roundtable meeting, the Contractor shall also lead a discussion on the Grantee's current and future needs related to electricity distribution operations and billing, as well as general sectoral priorities. Based on this discussion, the Contractor shall outline the desired direction and short-, medium- and long-term objectives for improving the Grantee's electricity distribution systems with regard to operations, collections and billing, renewable energy integration, revenue organization, and any other areas identified during the roundtable meeting.

For the roundtable meeting, the Contractor shall: coordinate with the Grantee on appropriate meeting content; prepare an agenda, handouts, and presentation materials, as needed, for all meeting attendees; conduct the meeting and facilitate discussion; draft a report of the meeting and distribute the meeting report to meeting attendees and other relevant stakeholders identified by the Grantee; and maintain meeting records, including the agenda, any handouts and presentation materials, a list of all meeting participants, and the meeting report.

**Task 2 Deliverable:** The Contractor shall provide the Grantee with all work performed pursuant to Task 2.

### **Task 3: Smart Grid Technologies Review**

The Contractor shall evaluate the progress of smart grid programs in at least three countries that are applicable and can serve as benchmarks for the implementation of smart grid technologies in South Africa. At a minimum, the smart grid technologies review shall include:

- An overview of available smart grid technologies, including smart metering and related communications and IT technologies
- International standards for smart grid technologies, including smart metering and related communications and IT technologies
- Technical solutions employed in smart meter introduction
- Installation incentives
- Financing mechanisms available to electricity distribution companies and customers
- Key benefits qualification and quantification
- Use of smart meters for data collection and advanced tariff setting
- Non-traditional benefits, such as cross-sector, environmental, etc.
- Compliance with local regulatory requirements
- Implementation timetables
- Solutions for the disposal of existing meters

At a minimum, the technology solutions shall include the following criteria:

- Stand-alone complex meter read locally
- Stand-alone meter read remotely over “public” infrastructure
- Meter with short distance communication upgraded to fixed network
- Private fixed network advanced metering infrastructure system
- Communication alternatives

**Task 3 Deliverable:** The Contractor shall provide the Grantee with all work performed pursuant to Task 3.

### **Task 4: Smart Grid Maturity Assessment**

The Contractor shall conduct a smart grid maturity assessment of the Grantee’s existing electricity distribution system. The smart grid maturity assessment shall compare the characteristics of the Grantee’s existing electricity distribution system to international best practices for electricity distributions utilities that can serve as benchmarks for the Grantee. The smart grid maturity assessment shall be used to generate inputs for the smart grid implementation roadmap.

The Contractor can use established methodologies (such as the IBM Smart Grid Maturity Model, the U.S. Department of Energy Smart Grid Development Evaluation System, the Electric Power Research Institute Smart Grid Construction Assessment Indicators, etc.).

Alternatively, the Contractor may propose its own methodology for carrying out the smart grid maturity assessment that results in similar outputs to those provided by the methodologies listed above. At a minimum, the smart grid maturity assessment shall:

- Guide the development of a smart grid implementation roadmap
- Assess and prioritize current smart grid opportunities and projects
- Serve as a decision-making framework for smart grid investments
- Assess resource needs to move from one smart grid level to another
- Measure smart grid progress using key performance indicators

**Task 4 Deliverable:** The Contractor shall provide the Grantee with all work performed pursuant to Task 4.

#### **Task 5: Legal, Regulatory, and Institutional Review**

The Contractor shall conduct a review of the anticipated impact of relevant Host Country laws, regulations, standards, and institutions on the implementation of advanced metering infrastructure in Ekurhuleni. Throughout the course of the Study, the Contractor shall continue to monitor any changes in laws, regulations, standards, and institutions that impact Project implementation. The Contractor shall take these regulations, laws, standards, and institutions into account while carrying out Tasks 6–12 below.

The Contractors shall also conduct a detailed review of any Host Country laws, regulations, standards, and institutions that need to be taken into account for implementation of the Pilot. At a minimum, this review shall include permitting requirements, local building requirements, and ordinance constraints.

The Contractor shall identify the anticipated impact of relevant Host Country laws, regulations, standards, and institutions on the potential for U.S. company participation in the implementation of the Project and the Pilot.

**Task 5 Deliverable:** The Contractor shall provide the Grantee with all work performed pursuant to Task 5.

#### **Task 6: Preparation of Smart Grid Implementation Roadmap**

The Contractor shall use information acquired in Tasks 1-5 to prepare a detailed smart grid implementation roadmap for the Grantee. The smart grid implementation roadmap shall outline the Contractors recommendations for the implementation of smart grid technologies in Ekurhuleni over the 1-5 year, 5-10 year, and 10-20 year periods. The proposed system specifications for 1-5 years period shall be defined with as much detail as possible.

At a minimum, the smart grid implementation roadmap shall include the following:

- Targets for operations, billing and customer satisfaction
- Targets for losses reduction and system reliability
- Innovative revenue approaches
- Cost-cutting measures
- Smart grid roll-out plans
- Integration of smart grid technologies into existing systems, including required upgrades
- Replacement of existing management, measuring, billing equipment and IT infrastructure, as needed
- Capital requirements by time period for smart grid implementation, including an analysis of potential funding sources and structures
- Availability of resources for installation, organization, and maintenance
- Pilot project(s) as related to smart grid introduction and pilot analysis that shall enable larger roll-out of smart grid initiatives

**Task 6 Deliverable:** The Contractor shall provide the Grantee with all work performed pursuant to Task 6.

#### **Task 7: Preparation of Smart Metering Pilot Project**

The Contractor shall conduct a detailed evaluation and design a program for the limited roll-out of advanced metering infrastructure within the Grantee's electricity distribution service territory. The objective of the Pilot is to evaluate the applicability of current smart metering technologies for different classes of customers within the Grantee's electricity distribution service territory and investigate the required changes to the Grantee's related communications and IT infrastructure changes to accommodate the new advanced metering infrastructure.

At a minimum, the detailed evaluation and design of the Pilot shall include:

- Recommendations for appropriate smart metering and related communications and IT technologies
- Integration requirements
- Recommendations for the optimal number of customers by class for the Pilot
- Recommendations for measuring the results of the Pilot
- An analysis of interconnections between the Pilot and existing tariff structures within the Grantee's electricity distribution service territory
- Recommendations for new tariff structures, such as dynamic pricing, expanded time of use, etc. that would support the sustainability of the Pilot and full Project implementation
- An analysis of other anticipated tangible and intangible benefits of the Pilot (such as demand control, non-payment disconnect, data gathering automation, real-time system analysis, loss reduction, etc.)

The Contractor shall conduct a detailed life cycle cost analysis for the Pilot. The life cycle cost analysis shall include estimates of all anticipated capital costs that the Grantee will need to incur subsequent to the Study's completion and prior to implementation of the Pilot, at a minimum including estimated capital costs for materials, labor, logistics, and contingencies required to plan, design, develop, and build the Pilot. The life cycle cost analysis shall also include a detailed analysis of all long-term operational costs associated with maintaining the facilities, equipment, and other assets to be financed as part of the Pilot. These long-term costs may include, but are not limited to, warranties, operation, maintenance, acquisition, installation, refurbishment, and potential disposal costs. The Contractor shall also assess any additional costs which may arise due to the need for training programs, hiring additional laborers, and pension payments for any jobs that might be lost due to the implementation of the Pilot. The Grantee may provide the Contractor with historical costs from past pilot projects to support the life cycle cost analysis. If available, the Contractor shall independently assess and verify these costs before incorporating them into the life cycle cost analysis. The Contractor shall provide the Grantee with cost-benefit analyses for various options for Pilot implementation, include a least-cost option and the Contractor's recommended option.

The Contractor shall conduct a preliminary life cycle cost analysis and cost-benefit analyses for full Project implementation.

**Task 7 Deliverable:** The Contractor shall provide the Grantee with all work performed pursuant to Task 7.

### **Task 8: Preparation of Pilot Implementation and Integration Program**

The Contractor shall prepare a detailed implementation program for the Pilot. The implementation program shall identify all the steps the Grantee will need to take subsequent to the Study's completion to implement the Pilot, such as:

- Compliance with all institutional, legal, regulatory, and standards requirements, including all necessary approvals, certifications, and permits
- Financial arrangements
- Procurements of goods and services
- Systems installation, integration, operation, management, and maintenance requirements
- Staffing and training requirements

The implementation program shall include a recommended schedule for implementing the Pilot, including recommendations for phasing, milestones, and prioritization of investments based on the following factors:

- Technology selected
- Availability of resources for installation, organization, and maintenance

- Cost implications and availability of funding
- Direct and indirect benefits of smart meters installation

The Contractor shall also prepare a preliminary implementation program for full Project implementation.

The Contractor shall evaluate the necessary steps and develop a strategy for integrating the Pilot into the Grantee's existing electricity distribution systems (such as metering, billing and collections systems, GIS, SCADA systems, asset management systems, real time data management systems, emergency management systems, OMS, CIS, etc.). The integration program shall be aimed at eliminating redundant data capture processes and improving the Grantee's electricity distribution operations by facilitating interactions between or combining existing databases. At a minimum, the integration program shall include:

- An assessment of all technical (including system interface and information exchange) requirements for integrating the Pilot into the Grantee's existing and planned electricity distribution systems;
- Step-by-step recommendations for carrying out the integration program;
- Cost estimates for implementing the integration program, including costs of required upgrades to existing systems;
- Clear descriptions of the changes that would occur in the Grantee's electricity distribution network as a result of integrating the Pilot into the Grantee's existing electricity distribution systems

The Contractor shall also conduct a preliminary evaluation of the necessary steps and develop a strategy for integrating the full Project into the Grantee's existing electricity distribution systems.

If applicable, the Contractor shall recommend additional systems that are not currently used by the Grantee (such as meter data management, load management, etc.) that would support the Pilot and/or full Project implementation and evaluate the potential benefits and other anticipated impacts from integrating these additional systems into the Grantee's existing electricity distribution systems.

**Task 8 Deliverable:** The Contractor shall provide the Grantee with all work performed pursuant to Task 8.

### **Task 9: Economic Analysis**

The Contractor shall conduct a detailed economic analysis for the Pilot implementation program developed pursuant to Task 8. The economic analysis shall be based on the life cycle cost analysis developed pursuant to Task 7 and shall include a set of profitability indicators (such as net present value, internal rate of return, payback period, earnings accretion/dilution, etc.) for the Pilot. The Contractor shall also conduct an economic

sensitivity analysis of each major component of Pilot implementation program (reflecting variations in interest rates, electricity tariffs, sales volumes, and equipment costs), as well as a pro-forma assessment of required tariff increases or changes to the tariff structure, if any, to ensure the sustainability of the Pilot.

The Contractor shall also conduct a preliminary economic analysis for full Project implementation.

**Task 9 Deliverable:** The Contractor shall provide the Grantee with all work performed pursuant to Task 9.

### **Task 10: Financing Mechanism Analysis**

The Contractor shall provide a detailed analysis of various potential financing mechanisms for the Pilot, such as full customer expense; partially or fully subsidized installation, special purpose funds designed to ease the burden of this expenditure, etc. The Contractor shall also analyze various potential sources of external financing for the Pilot, such as: Government of South Africa budgetary resources; bilateral lending agencies such as the Export-Import Bank of the United States; multilateral lending agencies such as the World Bank and the Africa Development Bank; and private sector source of financing, such as commercial loans, supplier credits, and bond markets. The Contractor shall provide the Grantee with recommendations for the financial structure and sources of financing for the Pilot. The recommendations for the financial structure and sources of financing for the Pilot shall seek to maximize local funding for the Pilot, as well as to support the economical viability of the Pilot.

The Contractor shall also provide a preliminary analysis of various potential financing mechanisms for full Project implementation. The preliminary analysis of financing mechanisms for full Project implementation shall analyze various sources of potential financing for full Project implementation, but shall include a particular focus on Grantee budgetary resources and bond markets. The Contractor shall also discuss the Project with various regional and multilateral funding organizations (at a minimum including the Development Bank of Southern Africa, the World Bank, the African Development Bank, and the Export-Import Bank of the United States) to gauge their interest and ability to provide funding for full Project implementation.

**Task 10 Deliverable:** The Contractor shall provide the Grantee with all work performed pursuant to Task 10.

### **Task 11: Environmental and Social/Development Impact Assessment**

The Contractor shall conduct a detailed environmental impact assessment of the Pilot with reference to local requirements and those of multilateral lending agencies such as the World Bank. The environmental impact assessment shall: identify anticipated

environmental impacts, both positive and negative, associated with the Pilot; provide recommendations for maximizing positive environmental impacts and minimizing negative environmental impacts; and identify the steps that the Grantee will need to take subsequent to the Study's completion and prior to implementation of the Pilot to comply with local environmental requirements and those of multilateral lending agencies such as the World Bank. At a minimum, the environmental impact assessment shall account for the following:

- Existing meter disposition and recycling
- Air quality and noise
- Socio-economics/human resources
- Environmental risk assessment
- Occupational health and safety

The Contractor shall also conduct a preliminary environmental impact assessment of full Project implementation.

The Contractor shall conduct a detailed social/development impact assessment of the Pilot. The social/development impact assessment shall focus on the anticipated social and developmental impacts of the Pilot if the Pilot is implemented according to the Study recommendations. While the social/development impact assessment should specifically address the immediate impact of the Pilot, the Contractor shall also discuss, where appropriate, any additional developmental benefits of the Pilot, including spin-off and demonstration effects. The analysis of anticipated social and developmental impacts of the Pilot should be as concrete and detailed as possible. In particular, the Contractor shall provide estimates of the Pilot's anticipated social and developmental impacts in the following areas:

- (1) Infrastructure: The Contractor shall identify the anticipated infrastructure impacts of the Pilot, giving a brief synopsis and concrete examples of infrastructure impacts. Examples of infrastructure impacts related to implementation of the Pilot may include the installation of smart meters and related communications and IT technologies, as well as any new ancillary infrastructure required for implementation of the Pilot. The Contractor shall provide specific information about the anticipated infrastructure impacts of the Pilot, such as the number of smart meters to be installed, as well as the anticipated impact of this infrastructure on access to affordable, reliable electricity distribution services in Ekurhuleni.
- (2) Human Capacity Building: The Contractor shall identify the anticipated number and types of local jobs that would be created or retained as a result of the Pilot. The Contractor shall also identify the number of local people who would receive training and the types of training programs required to implement and sustain the Pilot. The Contractor shall not include any training performed under these Terms of Reference in the development impact assessment.
- (3) Technology Transfer and Productivity Enhancement: The Contractor shall identify the anticipated advanced technologies that would be utilized for the Pilot. The Contractor shall also identify anticipated efficiencies that would be gained as a result

of the Pilot. Examples of efficiencies related to implementation of the Pilot may include higher output per resource use, lower costs, or other common measures of efficiency used in the electricity distribution sector, such as reductions in technical and non-technical losses.

- (4) Market Oriented Reforms: The Contractor shall provide a description of any institutional, legal, regulatory, or standards changes that are recommended pursuant to these Terms of Reference and the effect they would have if implemented.
- (5) Other: The Contractor shall identify any other anticipated development impacts or benefits that would result from increasing access to affordable, reliable electricity distribution services in Ekurhuleni, such as positive spin-off effects on other sectors of the economy, indirect support for new employment opportunities, improved living standards, etc.

The Contractor shall also conduct a preliminary social/development impact assessment of full Project implementation in all of the areas listed above. The preliminary social/development impact assessment for full Project implementation shall provide estimates of the Project's anticipated social and developmental impacts in the areas listed above (infrastructure, human capacity building, technology transfer and productivity improvement, market oriented reforms, and other).

**Task 11 Deliverable:** The Contractor shall provide the Grantee with all work performed pursuant to Task 11.

### **Task 12: Final Report Preparation and Presentation**

The Contractor shall prepare and deliver to the Grantee a substantive and comprehensive draft final report of all work performed pursuant to these Terms of Reference ("Draft Final Report"). In addition to including all deliverables that have been provided to the Grantee pursuant to these Terms of Reference, the Draft Final Report shall identify prospective U.S. sources of supply for implementation of the Pilot and the Project. For each U.S. source of supply identified, the Contractor shall include: company name, point of contact, address, telephone and fax numbers, e-mail address, and relevant good(s) and/or service(s) provided.

After the Grantee has reviewed the Draft Final Report, the Contractor shall conduct a final report meeting with the Grantee at the Grantee's facilities or at another appropriate venue agreed upon by the Contractor and the Grantee, such venue to be provided at the Grantee's cost. The Grantee shall identify appropriate personnel and other relevant stakeholders to participate in the final report meeting.

During the final report meeting, the Contractor shall: review all work performed under these Terms of Reference; present the findings and recommendations from the Draft Final Report; and gather feedback from the Grantee on the Draft Final Report and Grantee requests for changes to the Draft Final Report, if any.

For the final report meeting, the Contractor shall: coordinate with the Grantee on appropriate meeting content; prepare an agenda, handouts, and presentation materials, as needed, for all meeting attendees; conduct the meeting and facilitate discussion; draft a report of the meeting and distribute the meeting report to meeting attendees and other relevant parties; and maintain meeting records, including the agenda, any handouts and presentation materials, a list of all meeting participants, and the meeting report, for inclusion in the Final Report.

Once the Contractor has incorporated the Grantee's requests for changes into the Draft Final Report, the Contractor shall prepare and deliver to the Grantee and USTDA a substantive and comprehensive final report of all work performed under these Terms of Reference ("Final Report"). The Final Report shall be organized according to the above tasks, and shall include all deliverables and documents that have been provided to the Grantee. The Final Report shall be prepared in accordance with Clause J of Annex II of the Grant Agreement.

## Annex II

### **USTDA Mandatory Contract Clauses**

#### **A. USTDA Mandatory Clauses Controlling**

The parties to this Contract acknowledge that this Contract is funded in whole or in part by the U.S. Trade and Development Agency ("USTDA") under the Grant Agreement between the Government of the United States of America acting through USTDA and Ekurhuleni Metropolitan Municipality ("Client"), dated March 27, 2013 ("Grant Agreement"). The Client has selected \_\_\_\_\_ ("Contractor") to perform the feasibility study ("Study") for the Ekurhuleni Smart Metering project ("Project") in South Africa ("Host Country"). The Client and the Contractor are the parties to this Contract, and they hereinafter are referred to collectively as the "Contract Parties." Notwithstanding any other provisions of this Contract, the following USTDA Mandatory Contract Clauses shall govern. All subcontracts entered into by Contractor funded or partially funded with USTDA Grant funds shall include these USTDA Mandatory Contract Clauses, except for clauses B(1), G, H, I, and J. In addition, in the event of any inconsistency between the Grant Agreement and the Contract or any subcontract thereunder, the Grant Agreement shall be controlling.

#### **B. USTDA as Financier**

##### **(1) USTDA Approval of Contract**

This Contract, and any amendment thereto, including any amendment to any annex thereto, and any proposed assignment of this Contract, must be approved by USTDA in writing in order to be effective with respect to the expenditure of USTDA Grant funds. USTDA will not authorize the disbursement of USTDA Grant funds until the Contract conforms to modifications required by USTDA during the Contract review process and the Contract has been formally approved by USTDA. To make this review in a timely fashion, USTDA must receive from either the Client or the Contractor an English language version of a final negotiated draft Contract or a signed Contract to the attention of the General Counsel's office at USTDA's address listed in Clause N below.

##### **(2) USTDA Not a Party to the Contract**

It is understood by the Contract Parties that USTDA has reserved certain rights such as, but not limited to, the right to approve the terms of this Contract and amendments thereto, including assignments, the selection of all contractors, the Terms of Reference, the Final Report, and any and all documents related to any contract funded under the Grant Agreement. The Contract Parties hereto further understand and agree that USTDA, in reserving any or all of the foregoing approval rights, has acted solely as a financing entity to assure the proper use of United States Government funds, and that any decision by USTDA to exercise or refrain from exercising these approval

rights shall be made as a financier in the course of financing the Study and shall not be construed as making USTDA a party to the Contract. The Contract Parties hereto understand and agree that USTDA may, from time to time, exercise the foregoing approval rights, or discuss matters related to these rights and the Project with the Contract Parties or the parties to any subcontract, jointly or separately; and in consideration of USTDA's role as financier, the Contract Parties further agree that USTDA's rights may be exercised without thereby incurring any responsibility or liability, in contract, tort, or otherwise, to the Contract Parties or the parties to any subcontract. Any approval or failure to approve by USTDA shall not bar the Client or USTDA from asserting any right they might have against the Contractor, or relieve the Contractor of any liability which the Contractor might otherwise have to the Client or USTDA.

### **C. Nationality, Source and Origin**

Except as USTDA may otherwise agree, the following provisions shall govern the delivery of goods and professional services funded by USTDA under the Grant Agreement:

- (a) the Contractor must be a U.S. firm;
- (b) the Contractor may use U.S. subcontractors without limitation;
- (c) employees of U.S. Contractor or U.S. subcontractor firms shall be U.S. citizens or non-U.S. citizens lawfully admitted for permanent residence in the United States, except as provided pursuant to subpart (d) below;
- (d) up to twenty percent (20%) of the USTDA Grant amount may be used to pay for services performed by (i) Host Country subcontractors, and/or (ii) Host Country nationals who are employees of the Contractor;
- (e) a Host Country subcontractor may only be used for specific services from the Terms of Reference identified in the subcontract;
- (f) subcontractors from countries other than the United States or Host Country may not be used;
- (g) goods purchased for performance of the Study and associated delivery services (e.g., international transportation and insurance) must have their nationality, source and origin in the United States; and
- (h) goods and services incidental to Study support (e.g., local lodging, food, and transportation) in Host Country are not subject to the above restrictions.

USTDA will make available further details concerning these provisions upon request.

#### **D. Recordkeeping and Audit**

The Contractor and subcontractors funded under the Grant Agreement shall maintain, in accordance with generally accepted accounting procedures, books, records, and other documents, sufficient to reflect properly all transactions under or in connection with the Contract. These books, records, and other documents shall clearly identify and track the use and expenditure of USTDA funds, separately from other funding sources. Such books, records, and documents shall be maintained during the period of performance of work provided for by this Contract, and for a period of three (3) years after final disbursement by USTDA. The Contractor and subcontractors shall afford USTDA, or its authorized representatives, the opportunity at reasonable times for inspection and audit of such books, records, and other documentation.

#### **E. U.S. Carriers**

##### **(1) Air**

Transportation by air of persons or property funded under the Grant Agreement shall be on U.S. flag carriers in accordance with the Fly America Act, 49 U.S.C. 40118, to the extent service by such carriers is available, as provided under applicable U.S. Government regulations.

##### **(2) Marine**

Transportation by sea of property funded under the Grant Agreement shall be on U.S. carriers in accordance with U.S. cargo preference law.

#### **F. Workman's Compensation Insurance**

The Contractor shall provide adequate Workman's Compensation Insurance coverage for work performed under this Contract.

#### **G. Reporting Requirements**

The Contractor shall advise USTDA by letter as to the status of the Project on March 1st annually for a period of two (2) years after completion of the Study. In addition, if at any time the Contractor receives follow-on work from the Client, the Contractor shall so notify USTDA and designate the Contractor's contact point including name, telephone, fax number, and e-mail address. Since this information may be made publicly available by USTDA, any information which is confidential shall be designated as such by the Contractor and provided separately to USTDA. USTDA will maintain the confidentiality of such information in accordance with applicable law.

## **H. Disbursement Procedures**

### **(1) USTDA Approval of Contract**

Disbursement of Grant funds will be made only after USTDA approval of this Contract.

### **(2) Payment Schedule Requirements**

A payment schedule for disbursement of Grant funds to the Contractor shall be included in this Contract. Such payment schedule must conform to the following USTDA requirements: (1) up to twenty percent (20%) of the total USTDA Grant amount may be used as a mobilization payment; (2) all other payments, with the exception of the final payment, shall be based upon Contract performance milestones; and (3) the final payment may be no less than fifteen percent (15%) of the total USTDA Grant amount, payable upon approval by USTDA of a Final Report that has been (i) prepared and submitted in accordance with the requirements set forth in Clause I below, and (ii) approved in writing by the Client in the manner provided for by Clause H(3)(b)(iii) below. Invoicing procedures for all payments are described below.

### **(3) Contractor Invoice Requirements**

USTDA will make all disbursements of USTDA Grant funds directly to the Contractor. The Contractor must provide USTDA with an ACH Vendor Enrollment Form (available from USTDA) with the first invoice. The Client shall request disbursement of funds by USTDA to the Contractor for performance of the Contract by submitting the following to USTDA:

#### **(a) Contractor's Invoice**

The Contractor's invoice shall include reference to an item listed in the Contract payment schedule, the requested payment amount, and an appropriate certification by the Contractor, as follows:

##### **(i) For a mobilization payment (if any):**

"As a condition for this mobilization payment, the Contractor certifies that it will perform all work in accordance with the terms of its Contract with the Client. To the extent that the Contractor does not comply with the terms and conditions of the Contract, including the USTDA Mandatory Contract Clauses contained therein, it will, upon USTDA's request, make an appropriate refund to USTDA. "

##### **(ii) For Contract performance milestone payments:**

"The Contractor has performed the work described in this invoice in accordance with the terms of its Contract with the Client and is entitled to payment thereunder. To the extent the Contractor has not complied with the terms and conditions of the Contract, including the USTDA Mandatory Contract Clauses contained therein, it will, upon USTDA's request, make an appropriate refund to USTDA."

(iii) For final payment:

"The Contractor has performed the work described in this invoice in accordance with the terms of its Contract with the Client and is entitled to payment thereunder. Specifically, the Contractor has submitted the Final Report to the Client, as required by the Contract, and received the Client's approval of the Final Report. To the extent the Contractor has not complied with the terms and conditions of the Contract, including the USTDA Mandatory Contract Clauses contained therein, it will, upon USTDA's request, make an appropriate refund to USTDA."

**(b) Client's Approval of the Contractor's Invoice**

(i) The invoice for a mobilization payment must be approved in writing by the Client.

(ii) For Contract performance milestone payments, the following certification by the Client must be provided on the invoice or separately:

"The services for which disbursement is requested by the Contractor have been performed satisfactorily, in accordance with applicable Contract provisions and the terms and conditions of the USTDA Grant Agreement."

(iii) For final payment, the following certification by the Client must be provided on the invoice or separately:

"The services for which disbursement is requested by the Contractor have been performed satisfactorily, in accordance with applicable Contract provisions and the terms and conditions of the USTDA Grant Agreement. The Final Report submitted by the Contractor has been reviewed and approved by the Client. "

**(c) USTDA Address for Disbursement Requests**

Requests for disbursement shall be submitted to the attention of the Finance Department at USTDA's address listed in Clause N below, or by e-mail to [invoices@ustda.gov](mailto:invoices@ustda.gov).

## **I. Termination**

### **(1) Method of Termination**

Either Contract Party may terminate this Contract upon giving written notice to the other party and USTDA. This notice shall be effective after either 30 days, or any other period set forth elsewhere in this Contract. Furthermore, this Contract shall terminate immediately upon notification of USTDA's termination of the Grant Agreement or the term of availability of any funds thereunder.

### **(2) Ramifications of Termination**

In the event that this Contract is terminated prior to completion, the Contractor will be eligible, subject to USTDA approval, for payment for the value of the work performed pursuant to the terms of this Contract. Likewise, in the event of such termination, USTDA is entitled to receive from the Contractor all USTDA Grant funds previously disbursed to the Contractor (including but not limited to mobilization payments) which exceed the value of the work performed pursuant to the terms of this Contract.

### **(3) Survivability**

Clauses B, D, G, H, I, and O of the USTDA Mandatory Contract Clauses shall survive the termination of this Contract.

## **J. USTDA Final Report**

### **(1) Definition**

"Final Report" shall mean the Final Report described in the attached Annex I Terms of Reference or, if no such "Final Report" is described therein, "Final Report" shall mean a substantive and comprehensive report of work performed in accordance with the attached Annex I Terms of Reference, including any documents delivered to the Client.

### **(2) Final Report Submission Requirements**

The Contractor shall provide the following to USTDA:

- (a)** One (1) complete hard copy of the Final Report for USTDA's records. This version shall have been approved by the Client in writing and must be in the English language. It is the responsibility of the Contractor to ensure that confidential information, if any, contained in this version be clearly marked. USTDA will maintain the confidentiality of such information in accordance with applicable law.

and

**(b)** One (1) hard copy of the Final Report suitable for public distribution ("Public Version"). The Public Version shall have been approved by the Client in writing and must be in the English language. As this version will be available for public distribution, it must not contain any confidential information. If the report in (a) above contains no confidential information, it may be used as the Public Version. In any event, the Public Version must be informative and contain sufficient Project detail to be useful to prospective equipment and service providers.

and

**(c)** Two (2) CD-ROMs, each containing a complete copy of the Public Version of the Final Report. The electronic files on the CD-ROMs shall be submitted in a commonly accessible read-only format. As these CD-ROMs will be available for public distribution, they must not contain any confidential information. It is the responsibility of the Contractor to ensure that no confidential information is contained on the CD-ROMs.

The Contractor shall also provide one (1) hard copy of the Public Version of the Final Report to the Commercial or Economic Section of the U.S. Embassy in Host Country for informational purposes.

### **(3) Final Report Presentation**

All Final Reports submitted to USTDA must be paginated and include the following:

**(a)** The front cover of every Final Report shall contain the name of the Client, the name of the Contractor who prepared the report, a report title, USTDA's logo, and USTDA's address. If the complete version of the Final Report contains confidential information, the Contractor shall be responsible for labeling the front cover of that version of the Final Report with the term "Confidential Version." The Contractor shall be responsible for labeling the front cover of the Public Version of the Final Report with the term "Public Version." The front cover of every Final Report shall also contain the following disclaimer:

"This report was funded by the U.S. Trade and Development Agency (USTDA), an agency of the U.S. Government. The opinions, findings, conclusions or recommendations expressed in this document are those of the author(s) and do not necessarily represent the official position or policies of USTDA. USTDA makes no representation about, nor does it accept responsibility for, the accuracy or completeness of the information contained in this report."

(b) The inside front cover of every Final Report shall contain USTDA's logo, USTDA's address, and USTDA's mission statement. Camera-ready copy of USTDA Final Report specifications will be available from USTDA upon request.

(c) The Contractor shall affix to the front of the CD-ROM a label identifying the Host Country, USTDA Activity Number, the name of the Client, the name of the Contractor who prepared the report, a report title, and the following language:

“The Contractor certifies that this CD-ROM contains the Public Version of the Final Report and that all contents are suitable for public distribution.”

(d) The Contractor and any subcontractors that perform work pursuant to the Grant Agreement must be clearly identified in the Final Report. Business name, point of contact, address, telephone and fax numbers, and e-mail address shall be included for Contractor and each subcontractor.

(e) The Final Report, while aiming at optimum specifications and characteristics for the Project, shall identify the availability of prospective U.S. sources of supply. Business name, point of contact, address, telephone and fax numbers, and e-mail address shall be included for each commercial source.

(f) The Final Report shall be accompanied by a letter or other notation by the Client which states that the Client approves the Final Report. A certification by the Client to this effect provided on or with the invoice for final payment will meet this requirement.

(g) The Client, USTDA, and the Commercial and/or Economic Section(s) of the U.S. Embassy in Host Country shall have irrevocable, worldwide, royalty-free, non-exclusive rights to use and distribute the Final Report.

## **K. Modifications**

All changes, modifications, assignments or amendments to this Contract, including the appendices, shall be made only by written agreement by the Contract Parties hereto, subject to written USTDA approval.

## **L. Study Schedule**

### **(1) Study Completion Date**

The completion date for the Study, which is March 31, 2014, is the date by which the Contract Parties estimate that the Study will have been completed.

## **(2) Time Limitation on Disbursement of USTDA Grant Funds**

Except as USTDA may otherwise agree, (a) no USTDA funds may be disbursed under this Contract for goods and services which are provided prior to the Effective Date of the Grant Agreement; and (b) no USTDA funds may be disbursed more than four (4) years after the Effective Date of the Grant Agreement.

## **M. Business Practices**

The Contract Parties recognize the existence of standards of conduct for public officials and commercial entities in their respective countries. Therefore, the Contract Parties shall fully comply with all United States and Host Country laws relating to corruption or bribery. For example, the Contractor and its subcontractors shall fully comply with the requirements of the Foreign Corrupt Practices Act, as amended (15 U.S.C. §§ 78dd-1 et seq.). Each Contract Party agrees that it shall require that any agent or representative hired to represent it in connection with the Study will comply with this paragraph and all laws which apply to activities and obligations of that Contract Party, including, but not limited to, those laws and obligations referenced above.

## **N. USTDA Address and Fiscal Data**

Any communication with USTDA regarding this Contract shall be sent to the following address and include the fiscal data listed below:

U.S. Trade and Development Agency  
1000 Wilson Boulevard, Suite 1600  
Arlington, Virginia 22209-3901  
USA

Phone: (703) 875-4357  
Fax: (703) 875-4009

### Fiscal Data:

Appropriation No.: 11 13/14 1001  
Activity No.: 2013-11009A  
Reservation No.: 2013123  
Grant No.: GH201311123

**O. Taxes**

USTDA funds provided under the Grant Agreement shall not be used to pay any taxes, tariffs, duties, fees or other levies imposed under laws in effect in Host Country, except for taxes of a de minimis nature imposed on local lodging, food, transportation, or airport arrivals or departures. Neither the Client nor the Contractor will seek reimbursement from USTDA for taxes, tariffs, duties, fees or other levies, except for taxes of a de minimis nature referenced above.

**P. Export Licensing**

The Contractor and all subcontractors are responsible for compliance with U.S. export licensing requirements, if applicable, in the performance of the Terms of Reference.

**Q. Contact Persons**

The Client designates the following person as the contact person for matters concerning this Contract:

Name:  
Title:  
Phone:  
Fax:  
E-Mail:

The Contractor designates the following person as the contact person for matters concerning this Contract:

Name:  
Title:  
Phone:  
Fax:  
E-Mail:

If anyone designated by a Contract Party as a contact person ceases service as a contact person at any point during the ten-year period following the date of signing of this Contract, the Contract Party that had designated that contact person shall provide USTDA and the other Contract Party with the name and contact information of a replacement contact person.

**R. Liability**

This Contract may include a clause that limits the liability of the Contract Parties, provided that such a clause does not (i) disclaim liability for special, incidental, general, or punitive damages, or (ii) limit the total amount of damages recoverable to an amount less than the total amount disbursed to the Contractor pursuant to this Contract.

## **S. Arbitration**

If the Contract Parties submit any dispute arising under this Contract for arbitration, the scope of any such arbitration shall be limited to the Contract Parties' rights and/or obligations under this Contract and may not extend to any right or obligation of USTDA. The arbitrator(s) shall not arbitrate issues directly affecting the rights or obligations of USTDA.

## **ANNEX 5**

## Annex I

### **Terms of Reference**

Ekurhuleni Metropolitan Municipality (“Grantee”) has requested funding from the U.S. Trade and Development Agency (“USTDA”) for a feasibility study (“Study”) to evaluate the technical, financial, and other critical aspects of the proposed Ekurhuleni Smart Metering project (“Project”) in South Africa. In particular, the Study will evaluate the feasibility of implementing advanced metering infrastructure in Ekurhuleni, South Africa. The Study will also include the development of a smart metering implementation roadmap and the design of a smart metering pilot project (“Pilot”). The primary objective of the Study is to provide the Grantee with analyses and recommendations that will support its decision-making with regard to the implementation of the Project.

#### **Task 1: Existing Electricity Distribution System Analysis**

The Contractor shall analyze the Grantee’s existing electricity distribution systems, at a minimum including the following technical and financial aspects:

##### Technical Aspects

- System layout (at a minimum including bulk purchase points, metering, major substations, and line voltages)
- Customer data (by class and type of metering)
- Hourly demand curves
- Existing information technology (“IT”) systems (such as metering, billing and collections systems, geographic information systems (“GIS”), supervisory, control and data acquisition (“SCADA”) systems, asset management systems, real time data management systems, emergency management systems, outage management system (“OMS”), customer information/complaints system (“CIS”), etc.)
- Loss statistics and root cause analysis for major categories
- Customer service performance and customer service satisfaction

##### Financial Aspects

- Bulk purchases
- Existing and future tariffs
- Revenue distribution by geography and customer classes
- Financial evaluation of technical and non-technical losses
- Cost budgeting process review and detailed allocation of costs for 2013-2014, as well as high-level 5-year cost allocation summary

Once the Contractor has collected and analyzed the technical and financial aspects of the Grantee’s existing electricity distribution system, the Contractor shall prepare a baseline report that outlines the existing state of Grantee’s existing electricity distribution system. In addition to containing all relevant information pertaining to the technical and financial performance of the Grantee’s existing electricity distribution system, the baseline report

shall also take into account relevant factors, such as environmental, societal, shareholder interests, etc.

**Task 1 Deliverable:** The Contractor shall provide the Grantee with all work performed pursuant to Task 1.

## **Task 2: Stakeholder Consultations**

In consultation with the Grantee, the Contractor shall identify key stakeholders for the development of Ekurhuleni's electricity distribution sector, such as relevant departments within the municipal government, Eskom, the National Energy Regulator of South Africa, the South African National Energy Development Institute, the South African Department of Energy, business associations, customer advocacy groups, etc.

The Contractor shall organize a roundtable meeting with the key stakeholders identified above. The meeting shall take place at the Grantee's facilities or at another appropriate venue agreed upon by the Contractor and the Grantee, such venue to be provided at the Grantee's cost. During the roundtable meeting, the Contractor shall: introduce the Contractor's Study team; review the tasks to be performed under these Terms of Reference; review the Contractor's work plan for completing the Study; review the existing state of Grantee's existing electricity distribution system; and identify and discuss the objectives of the Study and the Project. During the roundtable meeting, the Contractor shall also lead a discussion on the Grantee's current and future needs related to electricity distribution operations and billing, as well as general sectoral priorities. Based on this discussion, the Contractor shall outline the desired direction and short-, medium- and long-term objectives for improving the Grantee's electricity distribution systems with regard to operations, collections and billing, renewable energy integration, revenue organization, and any other areas identified during the roundtable meeting.

For the roundtable meeting, the Contractor shall: coordinate with the Grantee on appropriate meeting content; prepare an agenda, handouts, and presentation materials, as needed, for all meeting attendees; conduct the meeting and facilitate discussion; draft a report of the meeting and distribute the meeting report to meeting attendees and other relevant stakeholders identified by the Grantee; and maintain meeting records, including the agenda, any handouts and presentation materials, a list of all meeting participants, and the meeting report.

**Task 2 Deliverable:** The Contractor shall provide the Grantee with all work performed pursuant to Task 2.

### **Task 3: Smart Grid Technologies Review**

The Contractor shall evaluate the progress of smart grid programs in at least three countries that are applicable and can serve as benchmarks for the implementation of smart grid technologies in South Africa. At a minimum, the smart grid technologies review shall include:

- An overview of available smart grid technologies, including smart metering and related communications and IT technologies
- International standards for smart grid technologies, including smart metering and related communications and IT technologies
- Technical solutions employed in smart meter introduction
- Installation incentives
- Financing mechanisms available to electricity distribution companies and customers
- Key benefits qualification and quantification
- Use of smart meters for data collection and advanced tariff setting
- Non-traditional benefits, such as cross-sector, environmental, etc.
- Compliance with local regulatory requirements
- Implementation timetables
- Solutions for the disposal of existing meters

At a minimum, the technology solutions shall include the following criteria:

- Stand-alone complex meter read locally
- Stand-alone meter read remotely over “public” infrastructure
- Meter with short distance communication upgraded to fixed network
- Private fixed network advanced metering infrastructure system
- Communication alternatives

**Task 3 Deliverable:** The Contractor shall provide the Grantee with all work performed pursuant to Task 3.

### **Task 4: Smart Grid Maturity Assessment**

The Contractor shall conduct a smart grid maturity assessment of the Grantee’s existing electricity distribution system. The smart grid maturity assessment shall compare the characteristics of the Grantee’s existing electricity distribution system to international best practices for electricity distributions utilities that can serve as benchmarks for the Grantee. The smart grid maturity assessment shall be used to generate inputs for the smart grid implementation roadmap.

The Contractor can use established methodologies (such as the IBM Smart Grid Maturity Model, the U.S. Department of Energy Smart Grid Development Evaluation System, the Electric Power Research Institute Smart Grid Construction Assessment Indicators, etc.).

Alternatively, the Contractor may propose its own methodology for carrying out the smart grid maturity assessment that results in similar outputs to those provided by the methodologies listed above. At a minimum, the smart grid maturity assessment shall:

- Guide the development of a smart grid implementation roadmap
- Assess and prioritize current smart grid opportunities and projects
- Serve as a decision-making framework for smart grid investments
- Assess resource needs to move from one smart grid level to another
- Measure smart grid progress using key performance indicators

**Task 4 Deliverable:** The Contractor shall provide the Grantee with all work performed pursuant to Task 4.

#### **Task 5: Legal, Regulatory, and Institutional Review**

The Contractor shall conduct a review of the anticipated impact of relevant Host Country laws, regulations, standards, and institutions on the implementation of advanced metering infrastructure in Ekurhuleni. Throughout the course of the Study, the Contractor shall continue to monitor any changes in laws, regulations, standards, and institutions that impact Project implementation. The Contractor shall take these regulations, laws, standards, and institutions into account while carrying out Tasks 6–12 below.

The Contractors shall also conduct a detailed review of any Host Country laws, regulations, standards, and institutions that need to be taken into account for implementation of the Pilot. At a minimum, this review shall include permitting requirements, local building requirements, and ordinance constraints.

The Contractor shall identify the anticipated impact of relevant Host Country laws, regulations, standards, and institutions on the potential for U.S. company participation in the implementation of the Project and the Pilot.

**Task 5 Deliverable:** The Contractor shall provide the Grantee with all work performed pursuant to Task 5.

#### **Task 6: Preparation of Smart Grid Implementation Roadmap**

The Contractor shall use information acquired in Tasks 1-5 to prepare a detailed smart grid implementation roadmap for the Grantee. The smart grid implementation roadmap shall outline the Contractors recommendations for the implementation of smart grid technologies in Ekurhuleni over the 1-5 year, 5-10 year, and 10-20 year periods. The proposed system specifications for 1-5 years period shall be defined with as much detail as possible.

At a minimum, the smart grid implementation roadmap shall include the following:

- Targets for operations, billing and customer satisfaction
- Targets for losses reduction and system reliability
- Innovative revenue approaches
- Cost-cutting measures
- Smart grid roll-out plans
- Integration of smart grid technologies into existing systems, including required upgrades
- Replacement of existing management, measuring, billing equipment and IT infrastructure, as needed
- Capital requirements by time period for smart grid implementation, including an analysis of potential funding sources and structures
- Availability of resources for installation, organization, and maintenance
- Pilot project(s) as related to smart grid introduction and pilot analysis that shall enable larger roll-out of smart grid initiatives

**Task 6 Deliverable:** The Contractor shall provide the Grantee with all work performed pursuant to Task 6.

#### **Task 7: Preparation of Smart Metering Pilot Project**

The Contractor shall conduct a detailed evaluation and design a program for the limited roll-out of advanced metering infrastructure within the Grantee's electricity distribution service territory. The objective of the Pilot is to evaluate the applicability of current smart metering technologies for different classes of customers within the Grantee's electricity distribution service territory and investigate the required changes to the Grantee's related communications and IT infrastructure changes to accommodate the new advanced metering infrastructure.

At a minimum, the detailed evaluation and design of the Pilot shall include:

- Recommendations for appropriate smart metering and related communications and IT technologies
- Integration requirements
- Recommendations for the optimal number of customers by class for the Pilot
- Recommendations for measuring the results of the Pilot
- An analysis of interconnections between the Pilot and existing tariff structures within the Grantee's electricity distribution service territory
- Recommendations for new tariff structures, such as dynamic pricing, expanded time of use, etc. that would support the sustainability of the Pilot and full Project implementation
- An analysis of other anticipated tangible and intangible benefits of the Pilot (such as demand control, non-payment disconnect, data gathering automation, real-time system analysis, loss reduction, etc.)

The Contractor shall conduct a detailed life cycle cost analysis for the Pilot. The life cycle cost analysis shall include estimates of all anticipated capital costs that the Grantee will need to incur subsequent to the Study's completion and prior to implementation of the Pilot, at a minimum including estimated capital costs for materials, labor, logistics, and contingencies required to plan, design, develop, and build the Pilot. The life cycle cost analysis shall also include a detailed analysis of all long-term operational costs associated with maintaining the facilities, equipment, and other assets to be financed as part of the Pilot. These long-term costs may include, but are not limited to, warranties, operation, maintenance, acquisition, installation, refurbishment, and potential disposal costs. The Contractor shall also assess any additional costs which may arise due to the need for training programs, hiring additional laborers, and pension payments for any jobs that might be lost due to the implementation of the Pilot. The Grantee may provide the Contractor with historical costs from past pilot projects to support the life cycle cost analysis. If available, the Contractor shall independently assess and verify these costs before incorporating them into the life cycle cost analysis. The Contractor shall provide the Grantee with cost-benefit analyses for various options for Pilot implementation, include a least-cost option and the Contractor's recommended option.

The Contractor shall conduct a preliminary life cycle cost analysis and cost-benefit analyses for full Project implementation.

**Task 7 Deliverable:** The Contractor shall provide the Grantee with all work performed pursuant to Task 7.

### **Task 8: Preparation of Pilot Implementation and Integration Program**

The Contractor shall prepare a detailed implementation program for the Pilot. The implementation program shall identify all the steps the Grantee will need to take subsequent to the Study's completion to implement the Pilot, such as:

- Compliance with all institutional, legal, regulatory, and standards requirements, including all necessary approvals, certifications, and permits
- Financial arrangements
- Procurements of goods and services
- Systems installation, integration, operation, management, and maintenance requirements
- Staffing and training requirements

The implementation program shall include a recommended schedule for implementing the Pilot, including recommendations for phasing, milestones, and prioritization of investments based on the following factors:

- Technology selected
- Availability of resources for installation, organization, and maintenance

- Cost implications and availability of funding
- Direct and indirect benefits of smart meters installation

The Contractor shall also prepare a preliminary implementation program for full Project implementation.

The Contractor shall evaluate the necessary steps and develop a strategy for integrating the Pilot into the Grantee's existing electricity distribution systems (such as metering, billing and collections systems, GIS, SCADA systems, asset management systems, real time data management systems, emergency management systems, OMS, CIS, etc.). The integration program shall be aimed at eliminating redundant data capture processes and improving the Grantee's electricity distribution operations by facilitating interactions between or combining existing databases. At a minimum, the integration program shall include:

- An assessment of all technical (including system interface and information exchange) requirements for integrating the Pilot into the Grantee's existing and planned electricity distribution systems;
- Step-by-step recommendations for carrying out the integration program;
- Cost estimates for implementing the integration program, including costs of required upgrades to existing systems;
- Clear descriptions of the changes that would occur in the Grantee's electricity distribution network as a result of integrating the Pilot into the Grantee's existing electricity distribution systems

The Contractor shall also conduct a preliminary evaluation of the necessary steps and develop a strategy for integrating the full Project into the Grantee's existing electricity distribution systems.

If applicable, the Contractor shall recommend additional systems that are not currently used by the Grantee (such as meter data management, load management, etc.) that would support the Pilot and/or full Project implementation and evaluate the potential benefits and other anticipated impacts from integrating these additional systems into the Grantee's existing electricity distribution systems.

**Task 8 Deliverable:** The Contractor shall provide the Grantee with all work performed pursuant to Task 8.

### **Task 9: Economic Analysis**

The Contractor shall conduct a detailed economic analysis for the Pilot implementation program developed pursuant to Task 8. The economic analysis shall be based on the life cycle cost analysis developed pursuant to Task 7 and shall include a set of profitability indicators (such as net present value, internal rate of return, payback period, earnings accretion/dilution, etc.) for the Pilot. The Contractor shall also conduct an economic

sensitivity analysis of each major component of Pilot implementation program (reflecting variations in interest rates, electricity tariffs, sales volumes, and equipment costs), as well as a pro-forma assessment of required tariff increases or changes to the tariff structure, if any, to ensure the sustainability of the Pilot.

The Contractor shall also conduct a preliminary economic analysis for full Project implementation.

**Task 9 Deliverable:** The Contractor shall provide the Grantee with all work performed pursuant to Task 9.

### **Task 10: Financing Mechanism Analysis**

The Contractor shall provide a detailed analysis of various potential financing mechanisms for the Pilot, such as full customer expense; partially or fully subsidized installation, special purpose funds designed to ease the burden of this expenditure, etc. The Contractor shall also analyze various potential sources of external financing for the Pilot, such as: Government of South Africa budgetary resources; bilateral lending agencies such as the Export-Import Bank of the United States; multilateral lending agencies such as the World Bank and the Africa Development Bank; and private sector source of financing, such as commercial loans, supplier credits, and bond markets. The Contractor shall provide the Grantee with recommendations for the financial structure and sources of financing for the Pilot. The recommendations for the financial structure and sources of financing for the Pilot shall seek to maximize local funding for the Pilot, as well as to support the economical viability of the Pilot.

The Contractor shall also provide a preliminary analysis of various potential financing mechanisms for full Project implementation. The preliminary analysis of financing mechanisms for full Project implementation shall analyze various sources of potential financing for full Project implementation, but shall include a particular focus on Grantee budgetary resources and bond markets. The Contractor shall also discuss the Project with various regional and multilateral funding organizations (at a minimum including the Development Bank of Southern Africa, the World Bank, the African Development Bank, and the Export-Import Bank of the United States) to gauge their interest and ability to provide funding for full Project implementation.

**Task 10 Deliverable:** The Contractor shall provide the Grantee with all work performed pursuant to Task 10.

### **Task 11: Environmental and Social/Development Impact Assessment**

The Contractor shall conduct a detailed environmental impact assessment of the Pilot with reference to local requirements and those of multilateral lending agencies such as the World Bank. The environmental impact assessment shall: identify anticipated

environmental impacts, both positive and negative, associated with the Pilot; provide recommendations for maximizing positive environmental impacts and minimizing negative environmental impacts; and identify the steps that the Grantee will need to take subsequent to the Study's completion and prior to implementation of the Pilot to comply with local environmental requirements and those of multilateral lending agencies such as the World Bank. At a minimum, the environmental impact assessment shall account for the following:

- Existing meter disposition and recycling
- Air quality and noise
- Socio-economics/human resources
- Environmental risk assessment
- Occupational health and safety

The Contractor shall also conduct a preliminary environmental impact assessment of full Project implementation.

The Contractor shall conduct a detailed social/development impact assessment of the Pilot. The social/development impact assessment shall focus on the anticipated social and developmental impacts of the Pilot if the Pilot is implemented according to the Study recommendations. While the social/development impact assessment should specifically address the immediate impact of the Pilot, the Contractor shall also discuss, where appropriate, any additional developmental benefits of the Pilot, including spin-off and demonstration effects. The analysis of anticipated social and developmental impacts of the Pilot should be as concrete and detailed as possible. In particular, the Contractor shall provide estimates of the Pilot's anticipated social and developmental impacts in the following areas:

- (1) Infrastructure: The Contractor shall identify the anticipated infrastructure impacts of the Pilot, giving a brief synopsis and concrete examples of infrastructure impacts. Examples of infrastructure impacts related to implementation of the Pilot may include the installation of smart meters and related communications and IT technologies, as well as any new ancillary infrastructure required for implementation of the Pilot. The Contractor shall provide specific information about the anticipated infrastructure impacts of the Pilot, such as the number of smart meters to be installed, as well as the anticipated impact of this infrastructure on access to affordable, reliable electricity distribution services in Ekurhuleni.
- (2) Human Capacity Building: The Contractor shall identify the anticipated number and types of local jobs that would be created or retained as a result of the Pilot. The Contractor shall also identify the number of local people who would receive training and the types of training programs required to implement and sustain the Pilot. The Contractor shall not include any training performed under these Terms of Reference in the development impact assessment.
- (3) Technology Transfer and Productivity Enhancement: The Contractor shall identify the anticipated advanced technologies that would be utilized for the Pilot. The Contractor shall also identify anticipated efficiencies that would be gained as a result

of the Pilot. Examples of efficiencies related to implementation of the Pilot may include higher output per resource use, lower costs, or other common measures of efficiency used in the electricity distribution sector, such as reductions in technical and non-technical losses.

- (4) Market Oriented Reforms: The Contractor shall provide a description of any institutional, legal, regulatory, or standards changes that are recommended pursuant to these Terms of Reference and the effect they would have if implemented.
- (5) Other: The Contractor shall identify any other anticipated development impacts or benefits that would result from increasing access to affordable, reliable electricity distribution services in Ekurhuleni, such as positive spin-off effects on other sectors of the economy, indirect support for new employment opportunities, improved living standards, etc.

The Contractor shall also conduct a preliminary social/development impact assessment of full Project implementation in all of the areas listed above. The preliminary social/development impact assessment for full Project implementation shall provide estimates of the Project's anticipated social and developmental impacts in the areas listed above (infrastructure, human capacity building, technology transfer and productivity improvement, market oriented reforms, and other).

**Task 11 Deliverable:** The Contractor shall provide the Grantee with all work performed pursuant to Task 11.

### **Task 12: Final Report Preparation and Presentation**

The Contractor shall prepare and deliver to the Grantee a substantive and comprehensive draft final report of all work performed pursuant to these Terms of Reference ("Draft Final Report"). In addition to including all deliverables that have been provided to the Grantee pursuant to these Terms of Reference, the Draft Final Report shall identify prospective U.S. sources of supply for implementation of the Pilot and the Project. For each U.S. source of supply identified, the Contractor shall include: company name, point of contact, address, telephone and fax numbers, e-mail address, and relevant good(s) and/or service(s) provided.

After the Grantee has reviewed the Draft Final Report, the Contractor shall conduct a final report meeting with the Grantee at the Grantee's facilities or at another appropriate venue agreed upon by the Contractor and the Grantee, such venue to be provided at the Grantee's cost. The Grantee shall identify appropriate personnel and other relevant stakeholders to participate in the final report meeting.

During the final report meeting, the Contractor shall: review all work performed under these Terms of Reference; present the findings and recommendations from the Draft Final Report; and gather feedback from the Grantee on the Draft Final Report and Grantee requests for changes to the Draft Final Report, if any.

For the final report meeting, the Contractor shall: coordinate with the Grantee on appropriate meeting content; prepare an agenda, handouts, and presentation materials, as needed, for all meeting attendees; conduct the meeting and facilitate discussion; draft a report of the meeting and distribute the meeting report to meeting attendees and other relevant parties; and maintain meeting records, including the agenda, any handouts and presentation materials, a list of all meeting participants, and the meeting report, for inclusion in the Final Report.

Once the Contractor has incorporated the Grantee's requests for changes into the Draft Final Report, the Contractor shall prepare and deliver to the Grantee and USTDA a substantive and comprehensive final report of all work performed under these Terms of Reference ("Final Report"). The Final Report shall be organized according to the above tasks, and shall include all deliverables and documents that have been provided to the Grantee. The Final Report shall be prepared in accordance with Clause J of Annex II of the Grant Agreement.

## Annex II

### USTDA Mandatory Contract Clauses

#### A. USTDA Mandatory Clauses Controlling

The parties to this Contract acknowledge that this Contract is funded in whole or in part by the U.S. Trade and Development Agency ("USTDA") under the Grant Agreement between the Government of the United States of America acting through USTDA and Ekurhuleni Metropolitan Municipality ("Client"), dated March 27, 2013 ("Grant Agreement"). The Client has selected \_\_\_\_\_ ("Contractor") to perform the feasibility study ("Study") for the Ekurhuleni Smart Metering project ("Project") in South Africa ("Host Country"). The Client and the Contractor are the parties to this Contract, and they hereinafter are referred to collectively as the "Contract Parties." Notwithstanding any other provisions of this Contract, the following USTDA Mandatory Contract Clauses shall govern. All subcontracts entered into by Contractor funded or partially funded with USTDA Grant funds shall include these USTDA Mandatory Contract Clauses, except for clauses B(1), G, H, I, and J. In addition, in the event of any inconsistency between the Grant Agreement and the Contract or any subcontract thereunder, the Grant Agreement shall be controlling.

#### B. USTDA as Financier

##### (1) USTDA Approval of Contract

This Contract, and any amendment thereto, including any amendment to any annex thereto, and any proposed assignment of this Contract, must be approved by USTDA in writing in order to be effective with respect to the expenditure of USTDA Grant funds. USTDA will not authorize the disbursement of USTDA Grant funds until the Contract conforms to modifications required by USTDA during the Contract review process and the Contract has been formally approved by USTDA. To make this review in a timely fashion, USTDA must receive from either the Client or the Contractor an English language version of a final negotiated draft Contract or a signed Contract to the attention of the General Counsel's office at USTDA's address listed in Clause N below.

##### (2) USTDA Not a Party to the Contract

It is understood by the Contract Parties that USTDA has reserved certain rights such as, but not limited to, the right to approve the terms of this Contract and amendments thereto, including assignments, the selection of all contractors, the Terms of Reference, the Final Report, and any and all documents related to any contract funded under the Grant Agreement. The Contract Parties hereto further understand and agree that USTDA, in reserving any or all of the foregoing approval rights, has acted solely as a financing entity to assure the proper use of United States Government funds, and that any decision by USTDA to exercise or refrain from exercising these approval

rights shall be made as a financier in the course of financing the Study and shall not be construed as making USTDA a party to the Contract. The Contract Parties hereto understand and agree that USTDA may, from time to time, exercise the foregoing approval rights, or discuss matters related to these rights and the Project with the Contract Parties or the parties to any subcontract, jointly or separately; and in consideration of USTDA's role as financier, the Contract Parties further agree that USTDA's rights may be exercised without thereby incurring any responsibility or liability, in contract, tort, or otherwise, to the Contract Parties or the parties to any subcontract. Any approval or failure to approve by USTDA shall not bar the Client or USTDA from asserting any right they might have against the Contractor, or relieve the Contractor of any liability which the Contractor might otherwise have to the Client or USTDA.

### **C. Nationality, Source and Origin**

Except as USTDA may otherwise agree, the following provisions shall govern the delivery of goods and professional services funded by USTDA under the Grant Agreement:

- (a) the Contractor must be a U.S. firm;
- (b) the Contractor may use U.S. subcontractors without limitation;
- (c) employees of U.S. Contractor or U.S. subcontractor firms shall be U.S. citizens or non-U.S. citizens lawfully admitted for permanent residence in the United States, except as provided pursuant to subpart (d) below;
- (d) up to twenty percent (20%) of the USTDA Grant amount may be used to pay for services performed by (i) Host Country subcontractors, and/or (ii) Host Country nationals who are employees of the Contractor;
- (e) a Host Country subcontractor may only be used for specific services from the Terms of Reference identified in the subcontract;
- (f) subcontractors from countries other than the United States or Host Country may not be used;
- (g) goods purchased for performance of the Study and associated delivery services (e.g., international transportation and insurance) must have their nationality, source and origin in the United States; and
- (h) goods and services incidental to Study support (e.g., local lodging, food, and transportation) in Host Country are not subject to the above restrictions.

USTDA will make available further details concerning these provisions upon request.

#### **D. Recordkeeping and Audit**

The Contractor and subcontractors funded under the Grant Agreement shall maintain, in accordance with generally accepted accounting procedures, books, records, and other documents, sufficient to reflect properly all transactions under or in connection with the Contract. These books, records, and other documents shall clearly identify and track the use and expenditure of USTDA funds, separately from other funding sources. Such books, records, and documents shall be maintained during the period of performance of work provided for by this Contract, and for a period of three (3) years after final disbursement by USTDA. The Contractor and subcontractors shall afford USTDA, or its authorized representatives, the opportunity at reasonable times for inspection and audit of such books, records, and other documentation.

#### **E. U.S. Carriers**

##### **(1) Air**

Transportation by air of persons or property funded under the Grant Agreement shall be on U.S. flag carriers in accordance with the Fly America Act, 49 U.S.C. 40118, to the extent service by such carriers is available, as provided under applicable U.S. Government regulations.

##### **(2) Marine**

Transportation by sea of property funded under the Grant Agreement shall be on U.S. carriers in accordance with U.S. cargo preference law.

#### **F. Workman's Compensation Insurance**

The Contractor shall provide adequate Workman's Compensation Insurance coverage for work performed under this Contract.

#### **G. Reporting Requirements**

The Contractor shall advise USTDA by letter as to the status of the Project on March 1st annually for a period of two (2) years after completion of the Study. In addition, if at any time the Contractor receives follow-on work from the Client, the Contractor shall so notify USTDA and designate the Contractor's contact point including name, telephone, fax number, and e-mail address. Since this information may be made publicly available by USTDA, any information which is confidential shall be designated as such by the Contractor and provided separately to USTDA. USTDA will maintain the confidentiality of such information in accordance with applicable law.

## **H. Disbursement Procedures**

### **(1) USTDA Approval of Contract**

Disbursement of Grant funds will be made only after USTDA approval of this Contract.

### **(2) Payment Schedule Requirements**

A payment schedule for disbursement of Grant funds to the Contractor shall be included in this Contract. Such payment schedule must conform to the following USTDA requirements: (1) up to twenty percent (20%) of the total USTDA Grant amount may be used as a mobilization payment; (2) all other payments, with the exception of the final payment, shall be based upon Contract performance milestones; and (3) the final payment may be no less than fifteen percent (15%) of the total USTDA Grant amount, payable upon approval by USTDA of a Final Report that has been (i) prepared and submitted in accordance with the requirements set forth in Clause I below, and (ii) approved in writing by the Client in the manner provided for by Clause H(3)(b)(iii) below. Invoicing procedures for all payments are described below.

### **(3) Contractor Invoice Requirements**

USTDA will make all disbursements of USTDA Grant funds directly to the Contractor. The Contractor must provide USTDA with an ACH Vendor Enrollment Form (available from USTDA) with the first invoice. The Client shall request disbursement of funds by USTDA to the Contractor for performance of the Contract by submitting the following to USTDA:

#### **(a) Contractor's Invoice**

The Contractor's invoice shall include reference to an item listed in the Contract payment schedule, the requested payment amount, and an appropriate certification by the Contractor, as follows:

##### **(i) For a mobilization payment (if any):**

"As a condition for this mobilization payment, the Contractor certifies that it will perform all work in accordance with the terms of its Contract with the Client. To the extent that the Contractor does not comply with the terms and conditions of the Contract, including the USTDA Mandatory Contract Clauses contained therein, it will, upon USTDA's request, make an appropriate refund to USTDA. "

##### **(ii) For Contract performance milestone payments:**

"The Contractor has performed the work described in this invoice in accordance with the terms of its Contract with the Client and is entitled to payment thereunder. To the extent the Contractor has not complied with the terms and conditions of the Contract, including the USTDA Mandatory Contract Clauses contained therein, it will, upon USTDA's request, make an appropriate refund to USTDA."

(iii) For final payment:

"The Contractor has performed the work described in this invoice in accordance with the terms of its Contract with the Client and is entitled to payment thereunder. Specifically, the Contractor has submitted the Final Report to the Client, as required by the Contract, and received the Client's approval of the Final Report. To the extent the Contractor has not complied with the terms and conditions of the Contract, including the USTDA Mandatory Contract Clauses contained therein, it will, upon USTDA's request, make an appropriate refund to USTDA."

**(b) Client's Approval of the Contractor's Invoice**

(i) The invoice for a mobilization payment must be approved in writing by the Client.

(ii) For Contract performance milestone payments, the following certification by the Client must be provided on the invoice or separately:

"The services for which disbursement is requested by the Contractor have been performed satisfactorily, in accordance with applicable Contract provisions and the terms and conditions of the USTDA Grant Agreement."

(iii) For final payment, the following certification by the Client must be provided on the invoice or separately:

"The services for which disbursement is requested by the Contractor have been performed satisfactorily, in accordance with applicable Contract provisions and the terms and conditions of the USTDA Grant Agreement. The Final Report submitted by the Contractor has been reviewed and approved by the Client. "

**(c) USTDA Address for Disbursement Requests**

Requests for disbursement shall be submitted to the attention of the Finance Department at USTDA's address listed in Clause N below, or by e-mail to [invoices@ustda.gov](mailto:invoices@ustda.gov).

## **I. Termination**

### **(1) Method of Termination**

Either Contract Party may terminate this Contract upon giving written notice to the other party and USTDA. This notice shall be effective after either 30 days, or any other period set forth elsewhere in this Contract. Furthermore, this Contract shall terminate immediately upon notification of USTDA's termination of the Grant Agreement or the term of availability of any funds thereunder.

### **(2) Ramifications of Termination**

In the event that this Contract is terminated prior to completion, the Contractor will be eligible, subject to USTDA approval, for payment for the value of the work performed pursuant to the terms of this Contract. Likewise, in the event of such termination, USTDA is entitled to receive from the Contractor all USTDA Grant funds previously disbursed to the Contractor (including but not limited to mobilization payments) which exceed the value of the work performed pursuant to the terms of this Contract.

### **(3) Survivability**

Clauses B, D, G, H, I, and O of the USTDA Mandatory Contract Clauses shall survive the termination of this Contract.

## **J. USTDA Final Report**

### **(1) Definition**

"Final Report" shall mean the Final Report described in the attached Annex I Terms of Reference or, if no such "Final Report" is described therein, "Final Report" shall mean a substantive and comprehensive report of work performed in accordance with the attached Annex I Terms of Reference, including any documents delivered to the Client.

### **(2) Final Report Submission Requirements**

The Contractor shall provide the following to USTDA:

- (a)** One (1) complete hard copy of the Final Report for USTDA's records. This version shall have been approved by the Client in writing and must be in the English language. It is the responsibility of the Contractor to ensure that confidential information, if any, contained in this version be clearly marked. USTDA will maintain the confidentiality of such information in accordance with applicable law.

and

(b) One (1) hard copy of the Final Report suitable for public distribution ("Public Version"). The Public Version shall have been approved by the Client in writing and must be in the English language. As this version will be available for public distribution, it must not contain any confidential information. If the report in (a) above contains no confidential information, it may be used as the Public Version. In any event, the Public Version must be informative and contain sufficient Project detail to be useful to prospective equipment and service providers.

and

(c) Two (2) CD-ROMs, each containing a complete copy of the Public Version of the Final Report. The electronic files on the CD-ROMs shall be submitted in a commonly accessible read-only format. As these CD-ROMs will be available for public distribution, they must not contain any confidential information. It is the responsibility of the Contractor to ensure that no confidential information is contained on the CD-ROMs.

The Contractor shall also provide one (1) hard copy of the Public Version of the Final Report to the Commercial or Economic Section of the U.S. Embassy in Host Country for informational purposes.

### **(3) Final Report Presentation**

All Final Reports submitted to USTDA must be paginated and include the following:

(a) The front cover of every Final Report shall contain the name of the Client, the name of the Contractor who prepared the report, a report title, USTDA's logo, and USTDA's address. If the complete version of the Final Report contains confidential information, the Contractor shall be responsible for labeling the front cover of that version of the Final Report with the term "Confidential Version." The Contractor shall be responsible for labeling the front cover of the Public Version of the Final Report with the term "Public Version." The front cover of every Final Report shall also contain the following disclaimer:

"This report was funded by the U.S. Trade and Development Agency (USTDA), an agency of the U.S. Government. The opinions, findings, conclusions or recommendations expressed in this document are those of the author(s) and do not necessarily represent the official position or policies of USTDA. USTDA makes no representation about, nor does it accept responsibility for, the accuracy or completeness of the information contained in this report."

(b) The inside front cover of every Final Report shall contain USTDA's logo, USTDA's address, and USTDA's mission statement. Camera-ready copy of USTDA Final Report specifications will be available from USTDA upon request.

(c) The Contractor shall affix to the front of the CD-ROM a label identifying the Host Country, USTDA Activity Number, the name of the Client, the name of the Contractor who prepared the report, a report title, and the following language:

“The Contractor certifies that this CD-ROM contains the Public Version of the Final Report and that all contents are suitable for public distribution.”

(d) The Contractor and any subcontractors that perform work pursuant to the Grant Agreement must be clearly identified in the Final Report. Business name, point of contact, address, telephone and fax numbers, and e-mail address shall be included for Contractor and each subcontractor.

(e) The Final Report, while aiming at optimum specifications and characteristics for the Project, shall identify the availability of prospective U.S. sources of supply. Business name, point of contact, address, telephone and fax numbers, and e-mail address shall be included for each commercial source.

(f) The Final Report shall be accompanied by a letter or other notation by the Client which states that the Client approves the Final Report. A certification by the Client to this effect provided on or with the invoice for final payment will meet this requirement.

(g) The Client, USTDA, and the Commercial and/or Economic Section(s) of the U.S. Embassy in Host Country shall have irrevocable, worldwide, royalty-free, non-exclusive rights to use and distribute the Final Report.

## **K. Modifications**

All changes, modifications, assignments or amendments to this Contract, including the appendices, shall be made only by written agreement by the Contract Parties hereto, subject to written USTDA approval.

## **L. Study Schedule**

### **(1) Study Completion Date**

The completion date for the Study, which is March 31, 2014, is the date by which the Contract Parties estimate that the Study will have been completed.

## **(2) Time Limitation on Disbursement of USTDA Grant Funds**

Except as USTDA may otherwise agree, (a) no USTDA funds may be disbursed under this Contract for goods and services which are provided prior to the Effective Date of the Grant Agreement; and (b) no USTDA funds may be disbursed more than four (4) years after the Effective Date of the Grant Agreement.

## **M. Business Practices**

The Contract Parties recognize the existence of standards of conduct for public officials and commercial entities in their respective countries. Therefore, the Contract Parties shall fully comply with all United States and Host Country laws relating to corruption or bribery. For example, the Contractor and its subcontractors shall fully comply with the requirements of the Foreign Corrupt Practices Act, as amended (15 U.S.C. §§ 78dd-1 et seq.). Each Contract Party agrees that it shall require that any agent or representative hired to represent it in connection with the Study will comply with this paragraph and all laws which apply to activities and obligations of that Contract Party, including, but not limited to, those laws and obligations referenced above.

## **N. USTDA Address and Fiscal Data**

Any communication with USTDA regarding this Contract shall be sent to the following address and include the fiscal data listed below:

U.S. Trade and Development Agency  
1000 Wilson Boulevard, Suite 1600  
Arlington, Virginia 22209-3901  
USA

Phone: (703) 875-4357  
Fax: (703) 875-4009

### Fiscal Data:

Appropriation No.: 11 13/14 1001  
Activity No.: 2013-11009A  
Reservation No.: 2013123  
Grant No.: GH201311123

**O. Taxes**

USTDA funds provided under the Grant Agreement shall not be used to pay any taxes, tariffs, duties, fees or other levies imposed under laws in effect in Host Country, except for taxes of a de minimis nature imposed on local lodging, food, transportation, or airport arrivals or departures. Neither the Client nor the Contractor will seek reimbursement from USTDA for taxes, tariffs, duties, fees or other levies, except for taxes of a de minimis nature referenced above.

**P. Export Licensing**

The Contractor and all subcontractors are responsible for compliance with U.S. export licensing requirements, if applicable, in the performance of the Terms of Reference.

**Q. Contact Persons**

The Client designates the following person as the contact person for matters concerning this Contract:

Name:  
Title:  
Phone:  
Fax:  
E-Mail:

The Contractor designates the following person as the contact person for matters concerning this Contract:

Name:  
Title:  
Phone:  
Fax:  
E-Mail:

If anyone designated by a Contract Party as a contact person ceases service as a contact person at any point during the ten-year period following the date of signing of this Contract, the Contract Party that had designated that contact person shall provide USTDA and the other Contract Party with the name and contact information of a replacement contact person.

**R. Liability**

This Contract may include a clause that limits the liability of the Contract Parties, provided that such a clause does not (i) disclaim liability for special, incidental, general, or punitive damages, or (ii) limit the total amount of damages recoverable to an amount less than the total amount disbursed to the Contractor pursuant to this Contract.

## **S. Arbitration**

If the Contract Parties submit any dispute arising under this Contract for arbitration, the scope of any such arbitration shall be limited to the Contract Parties' rights and/or obligations under this Contract and may not extend to any right or obligation of USTDA. The arbitrator(s) shall not arbitrate issues directly affecting the rights or obligations of USTDA.

## **ANNEX 6**



**USTDA-Funded Feasibility Study, Technical Assistance, or Training Grant**

**U.S. Firm Information Form**

This form is designed to enable the U.S. Trade and Development Agency ("USTDA") to obtain information about entities and individuals proposed for participation in USTDA-funded activities. Information in this form is used to conduct screening of entities and individuals to ensure compliance with legislative and executive branch prohibitions on providing support or resources to, or engaging in transactions with, certain individuals or entities with which USTDA must comply.

USTDA Activity Number [To be completed by USTDA]

Activity Type [To be completed by USTDA]	<input type="checkbox"/> Feasibility Study	<input type="checkbox"/> Technical Assistance	<input type="checkbox"/> Other (specify)
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Activity Title [To be completed by USTDA]

Full Legal Name of U.S. Firm

Business Address (street address only)

Telephone		Fax		Website	
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Year Established (include any predecessor company(s) and year(s) established, if appropriate).  
Please attach additional pages as necessary.

Please provide a list of directors and principal officers as detailed in Attachment A. Attached?  Yes  No

Type of Ownership	<input type="checkbox"/> Publicly Traded Company
	<input type="checkbox"/> Private Company
	<input type="checkbox"/> Other (please specify)

If Private Company or Other (if applicable), provide a list of shareholders and the percentage of their ownership. In addition, for each shareholder that owns 15% or more shares in U.S. Firm, please complete Attachment B.

Is the U.S. Firm a wholly-owned or partially owned subsidiary?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No

If so, please provide the name of the U.S. Firm's parent company(s). In addition, for any parent identified, please complete Attachment B.

Is the U.S. Firm proposing to subcontract some of the proposed work to another firm?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No

If yes, U.S. Firm shall complete Attachment C for each subcontractor. Attached?	<input type="checkbox"/> Yes
	<input type="checkbox"/> Not applicable

**Project Manager**

Name	Surname	
	Given Name	
Address		
Telephone		
Fax		
Email		

**Negotiation Prerequisites**

Discuss any current or anticipated commitments which may impact the ability of the U.S. Firm or its subcontractors to complete the Activity as proposed and reflect such impact within the project schedule.

Identify any specific information which is needed from the Grantee before commencing negotiations.

*U.S. Firm may attach additional sheets, as necessary.*

**U.S. Firm's Representations**

U.S. Firm shall certify to the following (or provide any explanation as to why any representation cannot be made):

1. U.S. Firm is a [check one]  Corporation  LLC  Partnership  Sole Proprietor  Other:   
 duly organized, validly existing and in good standing under the laws of the State of:   
 The U.S. Firm has all the requisite corporate power and authority to conduct its business as presently conducted, to submit this proposal, and if selected, to execute and deliver a contract to the Grantee for the performance of the USTDA Activity. The U.S. Firm is not debarred, suspended, or to the best of its knowledge or belief, proposed for debarment or ineligible for the award of contracts by any federal or state governmental agency or authority.
2. The U.S. Firm has included herewith, a copy of its Articles of Incorporation (or equivalent charter or document issued by a designated authority in accordance with applicable laws that provides information and authentication regarding the legal status of an entity) and a Certificate of Good Standing (or equivalent document) issued within 1 month of the date of signature below by the State of:   
 The U.S. Firm commits to notify USTDA and the Grantee if it becomes aware of any change in its status in the state in which it is incorporated. USTDA retains the right to request an updated certificate of good standing.
3. Neither the U.S. Firm nor any of its principal officers have, within the ten-year period preceding the submission of this proposal, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a federal, state or local government contract or subcontract; violation of federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, violating federal or state criminal tax laws, or receiving stolen property.
4. Neither the U.S. Firm, nor any of its principal officers, is presently indicted for, or otherwise criminally or civilly charged with, commission of any of the offenses enumerated in paragraph 3 above.
5. There are no federal or state tax liens pending against the assets, property or business of the U.S. Firm. The U.S. Firm, has not, within the three-year period preceding the submission of this proposal, been notified of any delinquent federal or state taxes in an amount that exceeds US\$3,000 for which the liability remains unsatisfied. Taxes are considered delinquent if (a) the tax liability has been fully determined, with no pending administrative or judicial appeals; and (b) a taxpayer has failed to pay the tax liability when full payment is due and required.
6. The U.S. Firm has not commenced a voluntary case or other proceeding seeking liquidation, reorganization or other relief with respect to itself of its debts under any bankruptcy, insolvency or other similar law. The U.S. Firm has not had filed against it an involuntary petition under any bankruptcy, insolvency or similar law.
7. The U.S. Firm certifies that it complies with USTDA Nationality, Source, and Origin Requirements and shall continue to comply with such requirements throughout the duration of the USTDA-funded activity. The U.S. Firm commits to notify USTDA and the Grantee if it becomes aware of any change which might affect U.S. Firm's ability to meet the USTDA Nationality, Source, and Origin Requirements.

*The U.S. Firm shall notify USTDA if any of the representations are no longer true and correct.*

U.S. Firm certifies that the information provided in this form is true and correct. U.S. Firm understands and agrees that the U.S. Government may rely on the accuracy of this information in processing a request to participate in a USTDA-funded activity. If at any time USTDA has reason to believe that any person or entity has willfully and knowingly provided incorrect information or made false statements, USTDA may take action under applicable law. The undersigned represents and warrants that he/she has the requisite power and authority to sign on behalf of the U.S. Firm.

Name	<input type="text"/>	Signature	<input type="text"/>
Title	<input type="text"/>		
Organization	<input type="text"/>	Date	<input type="text"/>





**ATTACHMENT B**

**USTDA-Funded Feasibility Study, Technical Assistance, or Training Grant**

**U.S. Firm Information Form – Shareholder(s) and Parent Company(s)**

If applicable, U.S. Firm provided a list of shareholders and the percentage of their ownership. This form shall be completed for each shareholder that owns 15% or more shares in U.S. Firm, as well as any parent corporation of the U.S. Firm (“Shareholder”). In addition, this form shall be completed for each shareholder identified in Attachment B that owns 15% or more shares in any Shareholder, as well as any parent identified in Attachment B.

USTDA Activity Number [To be completed by USTDA]	
--	--

Activity Title [To be completed by USTDA]	
---	--

Full Legal Name of U.S. Firm	
------------------------------	--

Full Legal Name of Shareholder	
--------------------------------	--

Business Address of Shareholder (street address only)	
---	--

Telephone number		Fax Number	
------------------	--	------------	--

Year Established (include any predecessor company(s) and year(s) established, if appropriate). Please attach additional pages as necessary.	
---	--

Country of Shareholder’s Principal Place of Business	
--	--

Please provide a list of directors and principal officers as detailed in Attachment A. Attached?	Yes
--	-----

Type of Ownership	<input type="checkbox"/> Publicly Traded Company
	<input type="checkbox"/> Private Company
	<input type="checkbox"/> Other

If applicable, provide a list of shareholders and the percentage of their ownership. In addition, for each shareholder that owns 15% or more shares in Shareholder, please complete Attachment B.	
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Is the Shareholder a wholly-owned or partially owned subsidiary?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No

If so, please provide the name of the Shareholder’s parent(s). In addition, for any parent identified, please complete Attachment B.	
--	--

*Shareholder may attach additional sheets, as necessary.*



**ATTACHMENT C**

**USTDA-Funded Feasibility Study, Technical Assistance, or Training Grant**

**Subcontractor Information Form**

This form is designed to enable the U.S. Trade and Development Agency ("USTDA") to obtain information about entities and individuals proposed for participation in USTDA-funded activities. Information in this form is used to conduct screening of entities and individuals to ensure compliance with legislative and executive branch prohibitions on providing support or resources to, or engaging in transactions with, certain individuals or entities with which USTDA must comply.

USTDA Activity Number [ <i>To be completed by USTDA</i> ]	
---	--

Activity Title [ <i>To be completed by USTDA</i> ]	
--	--

Full Legal Name of Prime Contractor U.S. Firm ("U.S. Firm")	
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Full Legal Name of Subcontractor	
----------------------------------	--

Business Address of Subcontractor (street address only)	
---	--

Telephone Number	
------------------	--

Fax Number	
------------	--

Year Established (include any predecessor company(s) and year(s) established, if appropriate). Please attach additional pages as necessary.	
---	--

**Subcontractor Point of Contact**

Name	Surname	
	Given Name	

Address	
---------	--

Telephone	
-----------	--

Fax	
-----	--

Email	
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**Subcontractor's Representations**

Subcontractor shall provide the following (or any explanation as to why any representation cannot be made), made as of the date of the proposal:

1. Subcontractor is a <i>[check one]</i>	<input type="checkbox"/> Corporation	<input type="checkbox"/> LLC	<input type="checkbox"/> Partnership	<input type="checkbox"/> Sole Proprietor	<input type="checkbox"/> Other
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duly organized, validly existing and in good standing under the laws of: \_\_\_\_\_ .

The subcontractor has all the requisite corporate power and authority to conduct its business as presently conducted, to participate in this proposal, and if the U.S. Firm is selected, to execute and deliver a subcontract to the U.S. Firm for the performance of the USTDA Activity and to perform the USTDA Activity. The subcontractor is not debarred, suspended, or to the best of its knowledge or belief, proposed for debarment or ineligible for the award of contracts by any federal or state governmental agency or authority.

2. Neither the subcontractor nor any of its principal officers have, within the ten-year period preceding the submission of the Offeror's proposal, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a federal, state or local government contract or subcontract; violation of federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, violating federal or state criminal tax laws, or receiving stolen property.

3. Neither the subcontractor, nor any of its principal officers, is presently indicted for, or otherwise criminally or civilly charged with, commission of any of the offenses enumerated in paragraph 2 above.

4. There are no federal or state tax liens pending against the assets, property or business of the subcontractor. The subcontractor, has not, within the three-year period preceding this RFP, been notified of any delinquent federal or state taxes in an amount that exceeds \$3,000 for which the liability remains unsatisfied. Taxes are considered delinquent if (a) the tax liability has been fully determined, with no pending administrative or judicial appeals; and (b) a taxpayer has failed to pay the tax liability when full payment is due and required.

5. The subcontractor has not commenced a voluntary case or other proceeding seeking liquidation, reorganization or other relief with respect to itself or its debts under any bankruptcy, insolvency or other similar law. The subcontractor has not had filed against it an involuntary petition under any bankruptcy, insolvency or similar law.

6. The Subcontractor certifies that it complies with the USTDA Nationality, Source, and Origin Requirements and shall continue to comply with such requirements throughout the duration of the USTDA-funded activity. The Subcontractor commits to notify USTDA, the Contractor, and the Grantee if it becomes aware of any change which might affect U.S. Firm's ability to meet the USTDA Nationality, Source, and Origin Requirements.

*The selected Subcontractor shall notify the U.S. Firm, Grantee and USTDA if any of the representations included in its proposal are no longer true and correct.*

Subcontractor certifies that the information provided in this form is true and correct. Subcontractor understands and agrees that the U.S. Government may rely on the accuracy of this information in processing a request to participate in a USTDA-funded activity. If at any time USTDA has reason to believe that any person or entity has willfully and knowingly provided incorrect information or made false statements, USTDA may take action under applicable law. The undersigned represents and warrants that he/she has the requisite power and authority to sign on behalf of the Subcontractor.

Name		Signature	
Title			
Organization		Date	