

REQUEST FOR PROPOSALS

FEASIBILITY STUDY FOR THE

CESC SMART GRID PROJECT

Submission Deadline: **12:00 PM NOON**
LOCAL TIME
THURSDAY, MAY 31, 2012

Submission Place: Mr. Aniruddha Basu
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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 for a Feasibility Study (FS) in the amount of US\$618,860 to the CESC Limited (CESC) (the “Grantee”) in accordance with a grant agreement dated March 26, 2012 (the “Grant Agreement”). The project has been identified by CESC as a top priority and is designed to improve the efficiency and reliability of its 2.5 million customer distribution system in Kolkata, India. The FS will develop requirements and specifications for a smart grid implementation roadmap for CESC as well as a smart grid pilot project that will be designed as part of the study. The Grant Agreement is attached in Annex 4 for reference. The Grantee is soliciting technical proposals from qualified U.S. firms to provide expert consulting services to perform the proposed FS. Please note that the firm involved in the feasibility study phase of the project will be precluded from follow-on equipment sales for the project but not follow on consulting or system integration opportunities provided CESC decides to appoint such Consultants or system integration firms during the implementation phase.

1.1 BACKGROUND SUMMARY

India’s ongoing economic expansion continues to face risks related to inadequate and irregular supply of electric power. India’s energy demand is predicted to more than double by 2030, requiring significant investment in generation, transmission and distribution capacity, and potentially increasing the frequency of power outages even in urban areas. Indian utilities face unprecedented challenges from a growing demand for high-quality, reliable electricity, increasingly stringent regulation, environmental concerns, and rising customer expectations, which require utilities to transform traditional electricity generation, transmission and delivery systems. Smart grid technologies are seen to provide a solution to this set of challenges, providing the ability to improve the quality and reliability of service, reduce technical and commercial power losses, integrate consumer use with peak and off-peak demand periods.

The private sector utility CESC shares these challenges with other Indian power utility companies, and currently suffers from transmission and distribution losses of approximately 13 percent. Transmission and distribution losses range up to 40 percent for public sector utilities in India. Nevertheless, CESC hopes to achieve transmission and distribution loss levels of 6 percent or less, which is more in line with international utility standards. CESC has requested assistance for a FS that would provide a roadmap for the development of a comprehensive implementation plan for a smart grid rollout in its distribution system.

The FS includes a design of smart grid pilot activities as part of the study and will assess the technological, economic, regulatory and financial viability of implementing smart grid projects in the CESC network. It will also focus on a review and analysis of the requirements and recommend a pilot project and system-wide upgrades including distribution system automation, telecommunications upgrades, IT system plans, integrating smart meters, home area networks and other relevant smart grid interactive communication technologies and management systems into the CESC distribution and management system. CESC has already initiated certain small trials with ring monitoring units (RMU) and several hundred automated meter reading (AMR) applications. CESC anticipates that the smart grid project and technology solutions would immediately help it in its ongoing quest to improve the quality and reliability of service while

reducing technical and commercial power losses. Portions of a background Desk Study are provided for reference in Annex 2.

1.2 OBJECTIVE

The objective of this FS is to provide recommendations for improving the efficiency and reliability of CESC's electricity distribution system in Kolkata, India, which serves 2.5 million customers. The project will address a range of needed improvements and investments including the integration of smart meters and automated meter reading into CESC's distribution system. In addition, the study will develop requirements and specifications for a Smart Grid implementation roadmap as well as the design of a Smart Grid pilot project. The Terms of Reference (TOR) for this 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\$618,860. **The USTDA grant of US\$618,860 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\$618,860 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 the CESC Smart Grid Project.

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 DESK STUDY

In January 2012, a Desk Study (DS) Contractor was engaged to evaluate the project for USTDA funding consideration. 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\$618,860.

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. Aniruddha Basu
Vice President
CESC Limited
CESC House, Chowringhee Square
Kolkata- 700 001
India

Phone: +91 33 22256040
Fax: +91 33 2236 5433
Email: aniruddha.basu@rp-sg.in
<http://www.cescltd.com/>

An Original and eight (8) copies of your proposal must be received at the above address no later than 12:00PM NOON, on THURSDAY, MAY 31, 2012.

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 eight (8) 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 NINETY (90) 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 and perform all necessary labor, supervision and services; and (b) 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 assure 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\$618,860, which is a fixed amount.

Offerors shall submit one (1) original and eight (8) 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:

- a. Experience of the Offeror in preparing feasibility studies for smart grid projects related to power distribution and adherence to time lines – 10%
- b. Experience with smart grid technologies as it relates to the Terms of Reference – 20%
- c. Technical approaches, methodologies and work plan proposed by the Offeror for various aspects of the study – 30%
- d. Experience and expertise of the team proposed to be deployed for the study – 20%
- e. Experience of working in India/ developing countries in related areas – 10%

- f. Past performance- Follow-on implementation based on Road maps / Specifications / Recommendations provided by the Offeror in other related Studies (i.e. has any successful follow-on implementation been completed (not necessarily by the Offeror) as a result of recommendations made by the Offeror in other related projects)– 10%

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. Aniruddha Basu, Vice President, CESC Limited, CESC House, Chowringhee Square Kolkata- 700 001, India, Phone: +91 33 22256040, Fax: +91 33 2236 5433, Email: aniruddha.basu@rp-sg.in, <http://www.cescltd.com/>

India: Feasibility Study on the CESC Smart Grid Project

POC: Anthony O'Tapi, USTDA, 1000 Wilson Boulevard, Suite 1600, Arlington, VA 22209-3901, Tel: (703) 875-4357, Fax: (703) 875-4009. The CESC Limited (CESC) (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 complete a feasibility study that will develop requirements and specifications for a smart grid implementation roadmap for CESC as well as a smart grid pilot that will be designed as part of the study. The project is will provide for greater system integration with distributed generators as well as to help provide application models for other distribution networks in India.

India's ongoing economic expansion continues to face risks related to inadequate and irregular supply of electric power. India's energy demand is predicted to more than double by 2030, requiring significant investment in generation, transmission and distribution capacity, and potentially increasing the frequency of power outages even in urban areas. Indian utilities face unprecedented challenges from a growing demand for high-quality, reliable electricity, increasingly stringent regulation, environmental concerns, and rising customer expectations, which require utilities to transform traditional electricity generation, transmission and delivery systems. Smart grid technologies are seen to provide a solution to this set of challenges, providing the ability to improve the quality and reliability of service, reduce technical and commercial power losses, integrate consumer use with peak and off-peak demand periods, and take advantage of distributed generation potential.

The private sector utility CESC shares these challenges with other Indian power utility companies, and currently suffers from transmission and distribution losses of approximately 13 percent. Transmission and distribution losses range up to 40 percent for public sector utilities in India. Nevertheless, CESC hopes to achieve transmission and distribution loss levels of 6 percent or less, which is more in line with international utility standards. The feasibility study will provide a roadmap for the development of a comprehensive implementation plan for a smart grid rollout in its distribution system. The study includes a design of smart grid pilot activities as part of the study and would assess the technological, economic, regulatory and financial viability of implementing smart grid projects in the CESC network. It will also focus on a review and analysis of the requirements and recommend a pilot project and system-wide upgrades including distribution system automation, telecommunications upgrades, IT system plans, integrating smart meters, home area networks and other relevant smart grid interactive communication technologies and management systems into the CESC distribution and management system. CESC has already initiated certain small trials with Ring Monitoring Units (RMU) and several hundred automated meter reading (AMR) applications. CESC anticipates that the smart grid project and technology solutions

would immediately help it in its ongoing quest to improve the quality and reliability of service while reducing technical and commercial power losses.

The objective of this FS is to provide recommendations for improving the efficiency and reliability of CESC's 2.5 million customer distribution system in Kolkata, India. The project will address a range of needed improvements and investments including the integration of smart meters and automated meter reading into CESC's distribution system. In addition, the study will develop requirements and specifications for a Smart Grid implementation roadmap as well as the design of a Smart Grid pilot project. This initiative is expected to provide for greater system integration with other power generators in India as well as to help provide application models for other electricity distribution networks throughout the country.

The U.S. firm selected will be paid in U.S. dollars from a US\$618,860 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.usda.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 12pm NOON local time India, May 31, 2012 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 is not bound to pay for any costs associated with the preparation and submission of Proposals.

ANNEX 2

PORTIONS OF THIS DESK STUDY REPORT HAVE BEEN INTENTIONALLY REDACTED

ONLY RELEVANT PORTIONS OF THIS DESK STUDY REPORT PERTAINING TO THE CESC SMART GRID PROJECT FEASIBILITY STUDY ARE INCLUDED HEREIN.

Project Description

BACKGROUND OF CESC LIMITED

CESC Limited is a flagship company of RP-Sanjiv Goenka Group, India's youngest business group born in 1820. CESC is a fully integrated power utility with its operation spanning the entire value chain: from mining coal, generating power, and the distribution of power. The Company is the sole distributor of electricity within an area of 567 sq. km of Kolkata and Howrah serving 2.5 million consumers, which includes domestic, industrial and commercial users, delivering safe, cost-effective and reliable energy. In FY 2010-11, the peak demand was 1,657 MW and 8,135 MU of energy was sold. The T&D Losses in the CESC system are below 13%. Starting as India's first fully integrated electrical utility, CESC has been generating and distributing electrical power in Kolkata and Howrah since 1899.

CESC owns and operates four thermal power plants generating 1,225 MW of power with a combined power load factor (PLF) of above 85%. These are Budge Generating Station (750 MW), Southern Generating Station (135 MW), Titagarh Generating Station (240 MW) and New Cossipore Generating Station (100 MW). More than 80% of the electricity requirement is met from CESC's own generating plants and the balance is purchased from third parties. About 50% of the coal requirement is sourced from captive mines.

The Transmission & Distribution Network

CESC owns and operates its transmission and distribution system through which electricity is supplied to customers. The major voltage levels and lengths of lines/cables being used range from 220 kV (179 ckm) through 132 kV (324 ckm), 33 kV (1,258 ckm), 11 kV & 6 kV (more than 5,000 ckm) and MVAC (about 11,000 ckm). The network predominantly comprises of underground cables. There is one substation with four 160 MVA, 220/132/33 kV transformers and 12 substations with one or more 132/33 kV transformers of 75 MVA and 50/55 MVA capacities apart from two 132 kV switching stations. The total transformer capacity at the substation level is 2,412 MVA.

Distribution stations transform power from 33 kV feeders from substations to 11 kV and 6 kV using one or more dual ratio transformers typically of 20 MVA capacity. There are 95 distribution stations with transformers having aggregate capacity of 2,880 MVA. 6 kV is the predominant secondary voltage accounting for 90% outgoing feeders from Distribution Stations. The balance 10% feeders are at 11 kV and new lines/upgrades from 6 kV are commissioned at 11 kV to reduce losses.

The 6.25 kV and 11 kV feeders are in Ring Main topology used radially with appropriate load-break, fault-make isolators. Each feeder traverses multiple SF6 Ring Main Units (3,500 have been commissioned till now) each with 3 or 4 legs comprising Isolators fitted with Fault Passage Indicators.

The 6 kV and 11 kV feeders also feed power to over 6,600 distribution transformers (mostly 315 kVA & 400 kVA) and 1,700 odd high tension (HT) consumers who consume about 36% of the total power sold.

The low-tension (LT) network is branched through Pillar Boxes with wired fuses in each branch.

Apart from a wide variety of high voltage outdoor and indoor AIS switchgear, CESC is now extensively using GIS switchgear to consolidate on space. Underground cables are XLPE insulated with appropriate outdoor and indoor terminations. Modern protective relaying is in place across the HT network including widespread use of Numerical Relays, some supporting the IEC 61850 protocol. Apart from backup protection, all high voltage (HV) lines have two main protections working on different principles. In CESC there is 100 % metering of consumers with a monthly billing system.

The tariff for various categories is based on the orders of West Bengal Electricity Regulatory Commission.

CESC, over the decades, has been keeping pace with advances in SCADA and Telecommunication technologies to monitor and control the power system network effectively. There have been several recent initiatives in Ring Main Unit (RMU) Automation, Distribution Management Systems (DMS) and Automatic Meter Reading (AMR).

CESC's customer profile reflects a growing system demand, a need for consistently high quality supply and the increase of customers in the High Tension and Medium Voltage segments. Coupled with a need to replace plants and equipment of older vintage, this has necessitated CESC to undertake a number of new investments to strengthen its distribution network. These investments have been made with the objective of providing new connections, enhancing the quality and security of supply, reducing downtime and overloads, and bringing down T & D losses. As a result there was a substantial improvement in the network performance. The following highlight the improvements within the CESC system:

- Reduction in the number of HT feeder tripping – 22% over FY 2009-2010
- Improvement in average restoration time for HT tripping – 19% over FY 2009-2010
- Reduction of 6 & 11 KV UG/OH faults – 31% over FY 2009-2010
- Improvement in average restoration time for LT fuse calls – 6% over FY 2009-2010
- Reduction of T&D loss from a high figure of 19% in FY 2002-2003 to 12.83% in FY 2010-2011

CESC's annual distribution capital expenditure (CAPEX) is about US \$120 Million.

CESC engaged Singapore Power, one of the world's best power utilities to help in implementing best-in-class maintenance practices for its distribution assets. The engagement visualizes a ten- year strategic plan for network development that would cope with the growing system demand. Based on the recommendations provided by Singapore Power, the following long-term targets have been identified:

- N-1 outage without interruption for 220,132 and 33 KV lines
- N-1 outage with one interruption for transformers at substation and distribution level
- Operational simplicity and load management at lower level with minimum switching.

As a utility, establishing and maintaining a high level of customer service is the prime objective of CESC. Over the years, the company has put in place systems and procedures to increase efficiency and enhance customer satisfaction. CESC maintains a centralized 24X7 call center as the customer touch point for complaints and queries. This system is connected to the distribution system and allows immediate routing of complaints to the nearest service team enabling prompt redress of complaints. The company has a fully functional online portal for its customers. The customers, apart from viewing their billing and related information, can lodge complaints and also make online payments.

Condition Based Maintenance

Condition Monitoring (CM) for incipient fault detection and ageing assessment of equipment is an important part of the CESC's modern maintenance strategy. Changeover to (i) condition- based maintenance from time-based maintenance and (ii) condition-based replacement from conservative replacement are also taking place. Various non-intrusive Condition Monitoring techniques in use include Dissolved Gas Analysis, Thermographic Scanning, and Partial Discharge Monitoring.

Planned Generation Investments by CESC

CESC is in process of setting up a number of power stations in the country. The following projects are at various stages of implementation. CESC plans to finance all of these projects with a combination of debt and equity for equipment and strategic bilateral support from U.K., Japan, and Germany.

Upcoming Projects

Location	Capacity	Type	Commissioning
Chandrapur, Maharashtra	600 MW	Thermal	2013
Haldia Phase 1, West Bengal	600 MW	Thermal	2014
Dhenkanal, Orissa	1000 MW	Thermal	2015
Dumka, Jharkhand	600 MW	Thermal	2016
Balagarh, West Bengal	1320 MW	Thermal	2016

As one of the nation's leading energy companies, CESC is committed to deliver safe and reliable electric power to its consumers. CESC also understand its responsibilities as a corporate citizen, specifically its responsibilities towards the environment, workers, customers, shareholders, general public and the future generations. To CESC it means doing business in a responsible way, one that actively takes into account diverse constituencies -- those who affect and are affected by the Company's activities.

DESCRIPTION OF THE PROJECT PROPOSED BY CESC

CESC has requested assistance from the USTDA to finance a feasibility study that would provide a roadmap for the development of a comprehensive plan of implementation of a Smart Grid project throughout its system. The feasibility study would include an independent evaluation to assess the technological, economic, regulatory support and financial aspects to implement Smart Grid projects – both consumer-centric and grid-centric, in the CESC network. On the basis of its complete review of the state of CESC's existing distribution, automation, metering, IT and telecommunications facilities and processes and the Smart Grid initiatives already undertaken and the constraints being faced, the feasibility study would focus on a review and analysis of the requirements and recommend both a pilot project and a system-wide upgradation including all IT infrastructure.

Specifically, the proposed Smart Grid pilot project and the system-wide project would encompass both customer-facing and network-facing technologies such as AMI and Feeder Automation. Smart Grid pilots are essential in helping utilities field-test technologies and develop their understanding of the business model implications for mainstream rollout. CESC has already initiated certain small trials in RMU Automation over GPRS and several hundred AMR applications and the proposed feasibility study would review these technologies and advise on the path forward – in particular regarding telecommunication issues in RMU/Feeder Automation and migration to AMI with Demand Response features. Compelling consumer value propositions need to be developed for AMI. CESC has earmarked funds for large scale RMU Automation in the near future, for both motorized and non-motorized RMUs, but a stable and reliable technology solution is needed with a successful pilot project implementation based on advice and specifications to be provided under the feasibility study.

CESC proposes to use, as a prototype, an upcoming large residential-cum-commercial complex in Kolkata called "Urbana" which would have more than 50 MW connected load, both HT and LT, with a large number of high-end residences and commercial establishments. This site would have a distribution station with multiple 20 MVA, 33/11 – 6 kV transformers, 11 kV and 6 kV switchboards, a large number of RMUs and scope for installing smart meters for AMI/AMR to high-end residential and commercial consumers after proper consumer engagement and education. The feasibility study would analyze the suitability or otherwise of the proposed site and the scope of the pilot project implementation which would cover customer-centric aspects including smart meters and

communication with and switching of consumer-end loads as well as network-centric applications such as RMU Automation and SCADA/DMS system.

In addition, the study would include the formulation of the specifications for an Enterprise Application Integration (EAI) system to enable integration of different systems and applications across the enterprise. The latter includes SCADA/DMS systems; OMS, CRM, GIS, Asset Management Software etc. and the EAI system should bind these together into a coherent and unified system for the efficient operation of CESC's distribution function. These specifications should also provide for integration of data from smart meters, RMUs and other components in the pilot project, as well as other feeders and customers who will eventually have AMI facilities. These specifications are for software and its related implementation that would integrate all of CESC's recently installed IT, automation and smart grid components into one functioning platform.

Project Sponsor's Capabilities and Commitment

CESC is recognized as one of the best managed integrated electric utility in India with the combined T&D losses of 13 percent compared to the average technical and non-technical losses in India measured at over 40 percent. In addition, CESC's quality of supply and service is considerable better than any other utility in India as evidenced by the number of outages and customer complaints. Other important achievements of CESC include the following:

- It has a very high rate of collections and the non-technical losses (theft) are well below India's average.
- CESC invests approximately US \$120 million in the maintenance and upgrading of its distribution system. The company is in a strong financial position and has clearly demonstrated its commitment to migrate to high-end Smart Grid technology as evidenced by the progress it has already made
- CESC enjoys a good reputation among both the investor community and its consumers. It also has an excellent record of regulatory compliance
- The management of CESC is extremely well qualified; many of whom have been trained at the top schools in India and abroad

Based on the above, CESC is fully capable of implementing the proposed grant, as they are quite experienced in engaging a variety of external funding agencies and implementing lender-funded activities.

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 CESC Limited ("Grantee"). USTDA agrees to provide the Grantee under the terms of this Agreement US\$618,860 ("USTDA Grant") to fund the cost of goods and services required for a feasibility study ("Study") on the proposed CESC Smart Grid ("Project") in India ("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. The parties to this Grant Agreement and the Contractor shall observe these standards, which include not accepting payment of money or anything of value, directly or indirectly, from any person for the purpose of illegally or improperly inducing anyone to take any action favorable to any party in connection with the Study.

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. The Grantee shall cover the costs of in-country travel and ground transportation and make as Grantee support staff available to the Contractor.

5. USTDA as Financier

(A) USTDA Approval of 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). Upon request, the Grantee will submit these contracting procedures and related documents to USTDA for information and/or approval.

(B) USTDA Approval of Contractor Selection

The Grantee shall notify USTDA at the address of record set forth in Article 17 below upon selection of the Contractor to perform the Study. Upon approval of this selection by USTDA, the Grantee and the Contractor shall then enter into a contract for performance of the Study. The Grantee shall notify in writing the U.S. firms that submitted unsuccessful proposals to perform the Study that they were not selected.

(C) USTDA Approval of Contract Between Grantee and Contractor

The Grantee and the Contractor shall enter into a contract for performance of the Study. This contract, and any amendments thereto, including assignments and changes in the Terms of Reference, must be approved by USTDA in writing. To expedite this approval, the Grantee (or the Contractor on the Grantee's behalf) shall transmit to USTDA, at the address set forth in Article 17 below, a photocopy of an English language version of the signed contract or a final negotiated draft version of the contract.

(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 subcontract thereunder must be consistent with this Grant Agreement. In the event of any inconsistency between the Grant Agreement and any contract or subcontract funded by the Grant Agreement, the Grant Agreement shall be controlling.

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.

8. Study Schedule

(A) Study Completion Date

The completion date for the Study, which is March 28, 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, (a) 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 (b) all funds made available under the Grant Agreement must be disbursed within four (4) years from the Effective Date of the Grant Agreement.

9. USTDA Mandatory Clauses

All contracts funded under this Grant Agreement shall include the USTDA mandatory 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 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 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.

(B) 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.

11. Nationality, Source and Origin

Except as USTDA may otherwise agree, the following provisions shall govern the delivery of goods and services funded by USTDA under the 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 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 (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 provisions upon request.

12. 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. Neither the Grantee nor the Contractor will seek reimbursement from USTDA for such taxes, tariffs, duties, fees or other levies.

13. Cooperation Between Parties and Follow-Up

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 (as defined in Clause I of Annex II), the Grantee agrees to respond to any reasonable inquiries from USTDA about the status or results of the Project, and upon receipt by the Grantee of the Final Report, will designate (by both title and organization) a point of contact for any such inquiries.

14. 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 the Grant Agreement. The parties may also use jointly agreed upon implementation letters to confirm and record their mutual understanding of matters covered by the Grant Agreement.

15. Recordkeeping and Audit

The Grantee agrees to maintain books, records, and other documents relating to the Study and the Grant Agreement adequate to demonstrate implementation of its responsibilities under the 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.

16. Representation of Parties

For all purposes relevant to the 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 the Chief Executive Officer. The parties hereto may, by written notice, designate additional representatives for all purposes under the Grant Agreement.

17. 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 a wire or electronic medium which produces a tangible record of the transmission, such as a telegram, cable or facsimile, and will be deemed duly given or sent when delivered to such party at the following:

To:

Mr. Aniruddha Basu
Vice President, CESC Limited
CESC House
Chowringhee Square
Kolkata 700 001
India

Phone: +91 33 6634 0570
Fax: +91 33 2236 6048
Email: aniruddha.basu@rp-sg.in:

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

All such communications shall be in English, unless the parties otherwise agree in writing. In addition, the Grantee shall provide the Commercial 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 12/13 1001
Activity No.: 2012-31013A
Reservation No.: 2012 119
Grant No.: GH 2012 31119

18. Termination Clause

Either party may terminate the Grant Agreement by giving the other party thirty (30) days advance written notice. 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 which they are committed to make pursuant to noncancellable commitments entered into with third parties prior to the written notice of termination.

19. 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.

20. 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.

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IN WITNESS WHEREOF, the Government of the United States of America and CESC Limited, each acting through its duly authorized representative, have caused this 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 CESC Limited

By: Henry D. Stungis

By: [Signature]

Date: 3-26-2012

Date: 26/03/2012

Witnessed:

By: [Signature]

Witnessed:

By: [Signature]

Annex I -- Terms of Reference

Annex II -- USTDA Mandatory Clauses

Annex I

Terms of Reference

The main objectives of this Feasibility Study (Study) are to develop requirements and specifications for a smart grid implementation roadmap for CESC Limited (Grantee) and to carry out a pilot project that, together, will facilitate technology validation and selection, investment decisions and priorities for system-wide implementation. The pilot project will combine customer-centric and network-centric technologies by integrating Distribution Management System (DMS), Feeder Automation (FA), and Advanced Metering Infrastructure (AMI). The Study shall formulate a plan for integrating Smart Grid technologies with the Grantee's existing distribution automation systems and IT applications. The Study shall also assess the technological, economic, and regulatory support and financial aspects of recommended Smart Grid technologies with suggestions for scale-up for Grantee system-wide implementation.

Task 1: Develop a Work Plan and Define Overall Parameters

The Contractor shall obtain all relevant and necessary information and available documentation from the Grantee and review the Grantee's current electricity distribution system structure, management and operating guidelines, the state of equipment currently in use and various smart grid initiatives already undertaken by the Grantee.

After completing this review, the Contractor shall meet with the Grantee and all stakeholders identified by the Grantee to discuss all aspects of the Study including the pilot project. The Contractor shall gain a better understanding of the perspectives and priorities of officials within relevant departments of the Grantee and pertinent government agencies, such as the West Bengal State Electricity Regulatory Commission, and the companies from which the Grantee receives electric power and transmission services.

Based on the review of various documents and discussions with the Grantee and stakeholders, the Contractor shall prepare a report that outlines the distribution system's smart grid readiness and shall propose a work plan for the remainder of the Study after mutual discussions and consensus with the Grantee.

Deliverable: The Contractor shall submit to the Grantee a report on all work conducted in Task 1 including its review of documents of the Grantee's existing distribution facilities and business processes vis-à-vis smart grid preparedness. The Contractor shall also prepare and submit a summary of the initial meetings with the Grantee and pertinent stakeholders and submit a detailed work plan for the completion of the feasibility study for review and approval by the Grantee.

Task 2: Review and Assess Distribution System and Automation/ Telecommunication/ Metering/ IT Plans

The Contractor shall perform a review of the overall distribution system at CESC with a focus on automation, metering, IT and telecommunications, including infrastructure, operations, and management. The Contractor shall meet with the Grantee's staff to review the current system for managing company resources. The Contractor shall

identify the major bottlenecks, if any, to moving forward with the implementation of the smart grid technologies in the distribution system.

Specifically, the Contractor shall examine all IT, automation (supervisory control and data acquisition (SCADA)/Distribution Management System (DMS), Feeder/Ring Main Unit (RMU) Automation), telecommunications, metering, and management systems and tools currently in use by the Grantee. The Contractor shall assess the Grantee's planned modernization and expansion plans for its distribution system, including plans for incorporating new automation, IT, metering, and management systems and tools into its operations and whether or not these plans are part of the smart grid pilot project or the eventual scale up for the entire distribution system. This assessment shall be carried out utilizing an industry best practice methodology such as the smart grid maturity model and shall be jointly agreed between the Grantee and the Contractor. The assessment shall also review the efficiency and shortcomings of the current distribution system at CESC.

Deliverable: The Contractor shall prepare a report on all work conducted in Task 2 including the documentation of its review of the distribution system and its evaluation and assessment of the Grantee's current distribution system with focus on automation, metering, IT and telecommunications, including technology, software, and distribution management systems. The Contractor shall provide to the Grantee a detailed report assessing the state of efficiency and shortcomings in the Grantee's existing distribution system through the use of the smart grid maturity model.

Task 3: Develop Detailed Recommendations for Pilot Project(s)

The Contractor shall review and assess, in consultation with the Grantee, the specific consumer-facing and network-facing technologies and processes the Grantee intends to test in the smart grid pilot project. The Contractor shall analyze how smart grid pilots allow innovation in a lowered risk environment based on internationally acceptable standards and how pilots help to field-test new technologies and generate capabilities and insights that will be of benefit in the successful full-scale roll-out of a smart grid.

Based on the above review and analysis, the Contractor shall recommend the site within the Grantee network best suited for the implementation of the smart grid pilot project considering the Urbana site or similar high-end residential-cum-commercial complex proposed by the Grantee. The Contractor's recommendation shall include the location, size of the area, customer types, the full scope of the pilot project, and investment requirements.

The Contractor shall validate the preliminary choice of the site already selected by the Grantee or suggest a different site on the basis of criteria to be agreed to between the Grantee and the Contractor. The Contractor shall analyze the desirability of including a few High Tension (HT) customers within the scope of the Automatic Metering Infrastructure (AMI) pilot project.

The Contractor shall identify the technological and economic advantages, benefits and rationale for specific smart grid technologies and processes such as AMI (for demand response and trials of other features) and Ring Main Unit (RMU) Automation/Feeder Automation that the Grantee proposes to include in the pilot project. The Contractor shall submit a detailed project report on the technologies and processes to be included in

the pilot project. With respect to RMU Automation, the Contractor shall recommend the communication technologies and Feeder Remote Terminal Units (FRTUs) to be used, optimum ratio of full vs. semi-automation and a roadmap beyond the pilot project. Due cognizance shall be taken of the issues and challenges already being faced by the Grantee, particularly poor real-time communications over General Packet Radio Service (GPRS), in deploying RMU automation at a few locations. In regards to Automatic Meter Reading (AMR) and AMI, the Contractor's report shall include respective equipment specifications and shall layout the framework complete with the following: Smart Meters, Home Area Network (HAN), In-Home Disconnecting Devices, Head End System and deployment of suitable bi-directional communication systems as necessary (such as Power Line Communications, Zigbee and RF Mesh), use of Data Concentrator Units, recommendations on use of Open Protocol such as Device Language Messaging Specification (DLMS) protocol with emphasis on scalability, upgradeability and facility to change Time-of-Use (TOU) zones, Maximum Demand (MD) Integration period, firmware, and possibility of a switch from post payment to prepayment mode.

The Contractor may suggest to the Grantee more than one pilot project if, in the Contractor's view, additional pilot projects are warranted. In that case, the Contractor shall also provide specifications for additional pilot projects similar to those for the one pilot project that is a component of this Study.

Based on the knowledge gained from Tasks 1 and 2 and the assessment and specification of the pilot project(s), the Contractor shall develop the details of the system-wide implementation. These specifications shall include overall hardware and software requirements and first order investment costs.

The Contractor shall assist the Grantee in consumer-engagement challenges for AMI by preparing suitable presentations and mailers. The Contractor shall analyze and evaluate the technologies and processes to be tested in the pilot project and system-wide implementation, and shall prepare a PowerPoint presentation suitable for electricity utility regulators describing their findings. The PowerPoint shall also assist the Grantee in obtaining the approval of the pilot project by the regulators.

The Contractor shall also research, review and evaluate three international case studies of smart grid pilot projects that utilize similar technologies and processes planned for the smart grid pilot project.

Task 3 Deliverables: The Contractor shall submit the following deliverable to the Grantee:

1. A detailed report on all work conducted in Task 3 including the pertinent case studies from other countries.
2. A detailed report on the proposed pilot project(s) including specifications, technology, investment requirements, and vendor sourcing for both the AMR/AMI and RMU/ Feeder Automation and/or similar trials encompassing both consumer-centric and network-centric technologies. This shall also include a detailed estimate of the investment requirements.

3. A report on the system-wide implementation including technologies and system specifications, quantities, and an estimate of the overall investment requirements.
4. A targeted report on consumer engagement methodology
5. A PowerPoint presentation on both the pilot project and the system-wide implementation for the benefit of the regulators.

Task 4: Develop Detailed Recommendations for Enterprise Application Integration

The Contractor, in coordination with the Grantee, shall identify the functional requirements and specifications for Enterprise Application Integration (EAI) that will include scalability. The Contractor shall provide the Grantee with detailed recommendations and specifications for the integration of the following systems using EAI strategies:

- SCADA/ DMS
- Geographic Information Systems (GIS)
- CESC's Meter Database
- Smart Billing
- Outage Management Systems (OMS)
- Enterprise Resource Planning (ERP)
- Customer Relationship Management (CRM)
- Automatic Metering Infrastructure (AMI) including meter reading
- Asset Management System
- Other related state-of-the-art IT systems and other related systems utilized in efficient distribution management based on international best practices

The Contractor shall develop organizational workflow diagrams for leveraging benefits after the implementation of the EAI Plan. The workflow diagrams shall include processes interface for breakdown in supply detected by the SCADA/DMS Systems, reflection of supply breakdown in the Outage Management System, updates of customers affected by outages in the Customer Relationship Management System and design and size of the IT System for secure data transfer among these applications

Based on the above assessment, the Contractor shall develop specifications for the EAI Plan that will reflect the number and type of applications to be integrated and the requirements of data transfer among those applications. The Contractor shall set forth the IT architectural design and develop the EAI Plan specifications to incorporate smart meters and other components of the pilot project.

Deliverable: The Contractor shall prepare a report on all work in Task 4 including the EAI functional requirements, workflow and solution architecture with specifications, and technology solutions including middleware and U.S. vendor sourcing.

Task 5: Develop a Road Map for Smart Grid Implementation

Based on the specification developed for the pilot project(s) and the system-wide implementation in Task 3 and the enterprise application integration requirements in Task 4, the Contractor shall develop an implementation roadmap describing the sequencing and grouping of long-term activities, including recommendations for additional pilot projects, if needed, funding approaches, and regulatory approvals required to execute the smart grid strategy.

The roadmap shall include the recommended path forward for current Grantee initiatives in the areas of SCADA/DMS, Feeder/RMU Automation, AMR/AMI and IT systems. The Contractor shall meet with pertinent government agencies, such as West Bengal Electricity Regulatory Commission, and the power agencies with whom the Grantee is interconnected, and ascertain how the pilot project and subsequent scale-up of the smart grid project will affect its tariff and relationships with the interconnected companies.

The Contractor shall identify and evaluate various options to implement the smart grid project and provide functional definitions of the scope of each phase of the project. Using a business maturity model, the Contractor shall define the most efficient sequence for implementing and integrating smart grid technologies and processes into the Grantee's existing business procedures on a system-wide basis. The Contractor shall investigate the advantages and disadvantages of alternative approaches to implementation and recommend the best solution.

Deliverable: The Contractor shall prepare and submit a smart grid implementation roadmap and integration strategy report.

Task 6: Economic/Financial Analysis, Regulatory Requirements, and Financing Plan

As the first part of this task, the Contractor shall conduct a detailed financial and economic analysis of the pilot project including the calculation of financial internal rate of return (FIRR) and the economic internal rate of return (EIRR) in accordance with international methodologies used by investors and lenders for such analyses. The Contractor shall also conduct a sensitivity analysis of the project based on various tariffs, interest rates, and other financial factors. The Contractor shall conduct a cost-benefit analysis and articulate the business case for investments in each smart grid technology or process that the Grantee proposes to include in the pilot project.

The Contractor shall conduct a similar analysis for the system-wide implementation. These analyses shall include a detailed description of the probable results of implementing smart grid technologies across the Grantee's greater service area.

As part of Task 6, the Contractor shall also identify and explain regulatory bases for recovering the costs through electricity rates of the specific smart grid technologies and processes identified by the Grantee for the pilot project and scale-up implementation.

Based on the investment requirements for both the pilot project and system-wide implementation, the Contractor shall develop a financing plan that shall include an analysis of the following:

- Portion of the projects that could be financed by the Grantee's internal resources
- Amounts needed from external sources in terms of grants and loans from international financial institutions
- Items that could be financed through suppliers' credits, a common practice in IT financing worldwide
- Items that may be suitable for financing by the U.S. Export-Import Bank

However, the final decision for financing will be taken by the Grantee at the time of system-wide implementation.

Deliverable: The Contractor shall prepare a report on all work conducted in Task 6 including a financial/economic analysis, analysis of regulatory requirements, and financing strategies for both the pilot project and system-wide implementation.

Task 7: Developmental Impact Assessment

The Contractor shall report on the potential developmental impact of the Project. While specific focus shall be paid to the immediate impact of the Project, the Contractor shall include, where appropriate, any additional developmental benefits, including spin-off and demonstration effects. The analysis of potential benefits of the Project shall be as concrete and detailed as possible. The Contractor shall provide estimates of the project's potential benefits in the following areas:

- **Infrastructure:** The Contractor shall provide a description of the infrastructure impact, specifically addressing the smart grid distribution systems implemented, the modernization of existing systems, and the expected impact on the ability of the Grantee to expand delivery, reduce downtime, and increase quality and reliability of power to its customer base. In addition, this assessment shall include an assessment of the ability of customers to reduce their use of power due to smart grid systems. Specific metrics shall be used to estimate the potential impacts.
- **Human Capacity Building:** The Contractor shall address the number and type of positions that would be needed to construct and operate the proposed project as well as the number of people who will require training and a brief description of the training program.

- **Technology Transfer and Productivity Enhancement:** The Contractor shall provide a description of any advanced technologies that will be implemented as a result of the Project and an estimate of the quantity of smart grid systems that would be implemented.
- **Other:** The Contractor shall identify any other developmental benefits to the Project, including any spin-off or demonstration effects.

Deliverable: The Contractor shall prepare a developmental impact assessment report based on the work conducted in Task 7.

Task 8: Preliminary Environmental Impact Assessment

The Contractor shall conduct a preliminary review of the anticipated impact on the environment with reference to local requirements and those of multilateral lending agencies (such as the World Bank). This review shall identify potential negative impacts, discuss the extent to which they can be mitigated, and develop plans for a full environmental impact assessment if and when the project moves forward to the system-wide implementation stage. This shall include the identification of steps that will need to be undertaken by the Grantee subsequent to the completion of the pilot project and prior to system-wide implementation.

Deliverable: The Contractor shall prepare a preliminary environmental impact assessment report based on the work conducted in Task 8.

Task 9: U.S. Sources of Supply

The Contractor shall conduct an assessment of the availability of potential U.S. sources of supply for the hardware and software needed for the implementation of the pilot project as well as the system-wide implementation project. The Contractor shall provide a list of potential U.S. suppliers including business name, point of contact, address, telephone number, e-mail, and fax numbers.

Deliverable: The Contractor shall deliver a report on Task 9 that shall include a list of U.S. sources of supply by type of hardware and software.

Task 10: 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 Contractor shall submit to the Grantee five (5) hard copies and one electronic copy of the Draft Report for review and comments. The Grantee shall provide written comments to the Contractor expeditiously. The Contractor shall then revise the Draft Report accordingly and submit five (5) hard copies and one electronic copy of the Final Report

along with all annexes and prior task deliverables. The Final Report shall be prepared in accordance with Clause I of Annex II of the Grant Agreement.

Notes:

- (1) The Contractor is responsible for compliance with U.S. export licensing requirements, if applicable, in the performance of the Terms of Reference.**
- (2) The Contractor and the Grantee shall be careful to ensure that the public version of the Final Report contains no security or confidential information.**
- (3) The Grantee and USTDA shall have an irrevocable, worldwide, royalty-free, non-exclusive right to use and distribute the Final Report and all work product that is developed under these Terms of Reference.**

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 CESC Limited ("Client"), dated _____ ("Grant Agreement"). The Client has selected _____ ("Contractor") to perform the feasibility study ("Study") for the CESC Smart Grid project ("Project") in India ("Host Country"). 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 any contract or subcontract thereunder, the Grant Agreement shall be controlling.

B. USTDA as Financier

(1) USTDA Approval of Contract

All contracts funded under the Grant Agreement, and any amendments thereto, including assignments and changes in the Terms of Reference, 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 has been formally approved by USTDA or until the contract conforms to modifications required by USTDA during the contract review process.

(2) 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 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 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 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 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 services funded by USTDA under the 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 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 (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 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 contract term 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, and fax number. 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. To make this review in a timely fashion, USTDA must receive from either the Client or the Contractor a photocopy of an English language version of a signed contract or a final negotiated draft version to the attention of the General Counsel's office at USTDA's address listed in Clause M below.

(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 receipt by USTDA of an approved Final Report in accordance with the specifications and quantities set forth in Clause I 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 provisions 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 provisions 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 provisions 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 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 by courier or mail to the attention of the Finance Department at USTDA's address listed in Clause M below or by email to invoices@ustda.gov.

(4) Termination

In the event that the Contract is terminated prior to completion, the Contractor will be eligible, subject to USTDA approval, for reasonable and documented costs which have been incurred in performing the Terms of Reference prior to termination, as well as reasonable wind down expenses. Reimbursement for such costs shall not exceed the total amount of undisbursed Grant funds. 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 reasonable and documented costs incurred in performing the Terms of Reference prior to termination.

I. 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 version 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) 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) copy of the Public Version of the Final Report to the Foreign Commercial Service Officer or the 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, USTDA's mailing and delivery addresses. 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 mailing and delivery addresses, 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 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 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.

J. Modifications

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

K. Study Schedule

(1) Study Completion Date

The completion date for the Study, which is March 28, 2014, is the date by which the 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) all funds made available under the Grant Agreement must be disbursed within four (4) years from the Effective Date of the Grant Agreement.

L. Business Practices

The Contractor agrees not to pay, promise to pay, or authorize the payment of any money or anything of value, directly or indirectly, to any person (whether a governmental official or private individual) for the purpose of illegally or improperly inducing anyone to take any action favorable to any party in connection with the Study. The Client agrees not to receive any such payment. The Contractor and the Client agree that each will require that any agent or representative hired to represent them in connection with the Study will comply with this paragraph and all laws which apply to activities and obligations of each party under this Contract, including but not limited to those laws and obligations dealing with improper payments as described above.

M. 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 12/13 1001

Activity No.: 2012-31013A

Reservation No.: 2012 119

Grant No.: GH 2012 31119

N. Definitions

All capitalized terms not otherwise defined herein shall have the meaning set forth in the Grant Agreement.

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. Neither the Client nor the Contractor will seek reimbursement from USTDA for such taxes, tariffs, duties, fees or other levies.

ANNEX 5

TERMS OF REFERENCE

The main objective of this project is to prepare a roadmap for smart grid implementation throughout the distribution system of CESC Limited, Kolkata and carry out a feasibility study to facilitate technology validation and selection, investment decisions and project priorities. Specifically, the feasibility study shall also include a pilot project rollout integrating Distribution Management System (DMS), Feeder Automation (FA), and Advanced Metering Infrastructure (AMI), which would combine both customer-centric and network-centric technologies. The study shall formulate a plan for integrating Smart Grid technologies with the Grantee's existing distribution automation systems and IT applications. The study shall also assess the technological, economic, and regulatory support and financial aspects of recommended Smart Grid technologies with suggestions for scale-up for CESC system-wide application.

Task 1: Develop a Work Plan and Define Overall Parameters

The Contractor shall obtain all relevant and necessary information and available documentation from the Grantee and review the Grantee's current electricity distribution system structure, management and operating guidelines, the state of equipment currently in use and various smart grid initiatives already undertaken by the Grantee.

After completing this review, the Contractor shall meet with the Grantee and all stakeholders identified by the Grantee to discuss all aspects of the study including the pilot project. The Contractor shall gain a better understanding of the perspectives and priorities of officials within relevant departments of the Grantee and pertinent government agencies, such as the West Bengal State Electricity Regulatory Commission, and the companies from which the Grantee receives electric power and transmission services.

Based on the review of various documents and discussions with the Grantee and stakeholders, the Contractor shall prepare a report that outlines the distribution system's smart grid readiness and shall propose a work plan for the project after mutual discussions and consensus with the Grantee.

Deliverable: The Contractor shall submit to the Grantee a report on all work conducted in Task 1 including its review of documents of the Grantee's existing distribution facilities and business processes vis-à-vis smart grid preparedness. The Contractor shall also prepare and submit a summary of the initial meetings with the Grantee and pertinent stakeholders and submit a detailed work plan for the completion of the feasibility study for review and approval by the Grantee.

Task 2: Review and Assess Distribution System and Automation/ Telecommunication/ Metering/ IT Plans

The Contractor shall perform a high level review of the overall distribution system at CESC with a focus on automation, metering, IT and telecommunications, including

infrastructure, operations, and management. The Contractor shall meet with the Grantee's staff to review the current system for managing company resources. The Contractor shall identify the major bottlenecks, if any, to moving forward with the implementation of the smart grid technologies in the distribution system.

Specifically, the Contractor shall examine all IT, automation (supervisory control and data acquisition (SCADA)/Distribution Management System (DMS), Feeder/Ring Main Unit (RMU) Automation), telecommunications, metering, and management systems and tools currently in use by the Grantee. The Contractor shall assess the Grantee's planned modernization and expansion plans for its distribution system, including plans for incorporating new automation, IT, metering, and management systems and tools into its operations and whether or not these plans are part of the smart grid pilot project or the eventual scale up for the entire distribution system. This assessment shall be carried out utilizing an industry best practice methodology such as the smart grid maturity model and shall be jointly agreed between the Grantee and the Contractor. The assessment shall also review the efficiency and shortcomings of the current distribution system at CESC.

Deliverable: The Contractor shall prepare a report on all work conducted in Task 2 including the documentation of its review of the distribution system and its evaluation and assessment of the Grantee's current distribution system with focus on automation, metering, IT and telecommunications, including technology, software, and distribution management systems. The Contractor shall provide to the Grantee a detailed report assessing the state of efficiency and shortcomings in the Grantee's existing distribution system through the use of the smart grid maturity model.

Task 3: Develop Detailed Recommendations for Pilot Project

The Contractor shall review and assess, in consultation with the Grantee, the specific consumer-facing and network-facing technologies and processes the Grantee intends to test in the smart grid pilot project. The Contractor shall analyze how smart grid pilots allow innovation in a lowered risk environment based on internationally acceptable standards and how pilots help to field-test new technologies and generate capabilities and insights that will be of benefit in the successful full-scale roll-out of a smart grid.

Based on the above review and analysis, the Contractor shall recommend the site within the CESC network best suited for the implementation of the smart grid pilot project considering the Urbana site or similar high-end residential-cum-commercial complex proposed by the Grantee. The Contractor's recommendation shall include the location, size of the area, customer types, the full scope of the pilot project, and investment requirements.

The Contractor shall validate the preliminary choice of the site already selected by the Grantee or suggest a different site on the basis of criteria to be agreed to between the Grantee and the Contractor. The Contractor shall analyze the desirability of including a few High Tension (HT) customers within the scope of the Automatic Metering Infrastructure (AMI) pilot project.

The Contractor shall identify the technological and economic advantages, benefits and rationale for specific smart grid technologies and processes such as AMI (for demand response and trials of other features) and Ring Main Unit (RMU) Automation/Feeder Automation that the Grantee proposes to include in the pilot project. The Contractor shall submit a detailed project report on the technologies and processes to be included in the pilot project. With respect to RMU Automation, the Contractor shall recommend the communication technologies and Feeder Remote Terminal Units (FRTUs) to be used, optimum ratio of full vs. semi-automation and a roadmap beyond the pilot project. Due cognizance shall be taken of the issues and challenges already being faced by the Grantee, particularly poor real-time communications over General Packet Radio Service (GPRS), in deploying RMU automation at a few locations. In regards to Automatic Meter Reading (AMR) and AMI, the Contractor's report shall include respective equipment specifications and shall layout the framework complete with the following: Smart Meters, Home Area Network (HAN), In-Home Disconnecting Devices, Head End System and deployment of suitable bi-directional communication systems as necessary (such as Power Line Communications, Zigbee and RF Mesh), use of Data Concentrator Units, recommendations on use of Open Protocol such as Device Language Messaging Specification (DLMS) protocol with emphasis on scalability, upgradeability and facility to change Time-of-Use (TOU) zones, Maximum Demand (MD) Integration period, firmware, and possibility of a switch from post payment to prepayment mode.

The Contractor may suggest to the Grantee more than one pilot project if so warranted. In that case, the Contractor shall also provide specifications for the additional pilot projects similar to those for the first pilot project.

Based on the knowledge gained from Tasks 1 and 2 and the assessment and specification of the pilot project(s), the Contractor shall develop the details of the system-wide project. These specifications shall include overall hardware and software requirements and first order investment costs.

The Contractor shall assist the Grantee in consumer-engagement challenges for AMI by preparing suitable presentations and mailers. The Contractor shall analyze and evaluate the technologies and processes to be tested in the pilot project and system-wide scale up, and shall prepare a PowerPoint presentation suitable for electricity utility regulators describing their findings. The PowerPoint shall also assist the Grantee in obtaining the approval of the pilot project by the regulators.

The Contractor shall also research, review and evaluate three international case studies of smart grid pilot projects that utilize similar technologies and processes planned for the smart grid pilot project.

Task 3 Deliverables: The Contractor shall submit the following deliverable to the Grantee:

1. A detailed report on all work conducted in Task 3 including the pertinent case studies from other countries.

2. A detailed report on the proposed pilot project(s) including specifications, technology, investment requirements, and vendor sourcing for both the AMR/AMI and RMU/ Feeder Automation and/or similar trials encompassing both consumer-centric and network-centric technologies. This shall also include a detailed estimate of the investment requirements.
3. A report on the system-wide scaled-up project including technologies and system specifications, quantities, and an estimate of the overall investment requirements.
4. A targeted report on consumer engagement methodology
5. A PowerPoint presentation on both the pilot project and the system-wide scaled-up project for the benefit of the regulators.

Task 4: Develop Detailed Recommendations for Enterprise Application Integration

The Contractor, in coordination with the Grantee, shall identify the functional requirements and specifications for Enterprise Application Integration (EAI) that will include scalability. The Contractor shall provide the Grantee with detailed recommendations and specifications for the integration of the following systems using EAI strategies:

- SCADA/ DMS
- Geographic Information Systems (GIS)
- CESC's Meter Database
- Smart Billing
- Outage Management Systems (OMS)
- Enterprise Resource Planning (ERP)
- Customer Relationship Management (CRM)
- Automatic Metering Infrastructure (AMI) including meter reading
- Asset Management System
- Other related state-of-the-art IT systems and other related systems utilized in efficient distribution management based on international best practices

The Contractor shall develop organizational workflow diagrams for leveraging benefits after the implementation of the EAI Plan. The workflow diagrams shall include processes interface for breakdown in supply detected by the SCADA/DMS Systems, reflection of supply breakdown in the Outage Management System, updates of customers affected by outages in the Customer Relationship Management System and design and size of the IT System for secure data transfer among these applications

Based on the above assessment, the Contractor shall develop specifications for the EAI Plan that will reflect the number and type of applications to be integrated and the requirements of data transfer among those applications. The Contractor shall set forth the IT architectural design and develop the EAI Plan specifications to incorporate smart meters and other components of the pilot project.

Deliverable: The Contractor shall prepare a report on all work in Task 4 including the EAI functional requirements, workflow and solution architecture with specifications, and technology solutions including middleware and U.S. vendor sourcing.

Task 5: Develop a Road Map for Smart Grid Implementation

Based on the specification developed for the pilot project(s) and the system-wide project in Task 3 and the enterprise application integration requirements in Task 4, the Contractor shall develop an implementation roadmap describing the sequencing and grouping of long-term activities, including recommendations for additional pilot projects, if needed, funding approaches, and regulatory approvals required to execute the smart grid strategy.

The roadmap shall include the recommended path forward for current Grantee initiatives in the areas of SCADA/DMS, Feeder/RMU Automation, AMR/AMI and IT systems.

The Contractor shall meet with pertinent government agencies, such as West Bengal Electricity Regulatory Commission, and the power agencies with whom the Grantee is interconnected, and ascertain how the pilot project and subsequent scale-up of the smart grid project will affect its tariff and relationships with the interconnected companies.

The Contractor shall identify and evaluate various options to implement the smart grid project and provide functional definitions of the scope of each phase of the project. Using a business maturity model, the Contractor shall define the most efficient sequence for implementing and integrating smart grid technologies and processes into the Grantee's existing business procedures on a system-wide basis. The Contractor shall investigate the advantages and disadvantages of alternative approaches to implementation and recommend the best solution.

Deliverable: The Contractor shall prepare and submit a smart grid implementation roadmap and integration strategy report.

Task 6: Economic/Financial Analysis, Regulatory Requirements, and Financing Plan

As the first part of this task, the Contractor shall conduct a detailed financial and economic analysis of the pilot project including the calculation of financial internal rate of return (FIRR) and the economic internal rate of return (EIRR) in accordance with international methodologies used by investors and lenders for such analyses. The Contractor shall also conduct a sensitivity analysis of the project based on various tariffs, interest rates, and other financial factors. The Contractor shall conduct a cost-benefit

analysis and articulate the business case for investments in each smart grid technology or process that the Grantee proposes to include in the pilot project.

The Contractor shall conduct a similar analysis for the system-wide scaled-up project. These analyses shall include a detailed description of the probable results of implementing smart grid technologies across the Grantee's greater service area.

As part of Task 6, the Contractor shall also develop the best arguments to electricity regulators for recovering the costs through electricity rates of the specific smart grid technologies and processes identified by the Grantee for the pilot project and scale-up implementation.

Based on the investment requirements for both the pilot project and system-wide project, the Contractor shall develop a financing plan that shall include an analysis of the following:

- Portion of the projects that could be financed by the Grantee's internal resources
- Amounts needed from external sources in terms of grants and loans from international financial institutions
- Items that could be financed through suppliers' credits, a common practice in IT financing worldwide
- Items that may be suitable for financing by the U.S. Export-Import Bank

However, the final decision for financing will be taken by the Grantee at the time of project rollout.

Deliverable: The Contractor shall prepare a report on all work conducted in Task 6 including a financial/economic analysis, analysis of regulatory requirements, and financing strategies for both the pilot project and system-wide implementation project.

Task 7: Developmental Impact Assessment

The Contractor shall report on the potential developmental impact of the Project. While specific focus shall be paid to the immediate impact of the Project, the Contractor shall include, where appropriate, any additional developmental benefits, including spin-off and demonstration effects. The analysis of potential benefits of the Project shall be as concrete and detailed as possible. The Contractor shall provide estimates of the project's potential benefits in the following areas:

- **Infrastructure:** The Contractor shall provide a description of the infrastructure impact, specifically addressing the smart grid distribution systems implemented, the modernization of existing systems, and the expected impact on the ability of the Grantee to expand delivery, reduce downtime, and increase quality and reliability of power to its customer base. In addition, this assessment shall include an assessment of the ability of customers to reduce their use of power due to smart grid systems. Specific metrics shall be used to estimate the potential impacts.

- **Human Capacity Building:** The Contractor shall address the number and type of positions that would be needed to construct and operate the proposed project as well as the number of people who will require training and a brief description of the training program.
- **Technology Transfer and Productivity Enhancement:** The Contractor shall provide a description of any advanced technologies that will be implemented as a result of the Project and an estimate of the quantity of smart grid systems that would be implemented.
- **Other:** The Contractor shall identify any other developmental benefits to the Project, including any spin-off or demonstration effects.

Deliverable: The Contractor shall prepare a developmental impact assessment report based on the work conducted in Task 7.

Task 8: Preliminary Environmental Impact Assessment

The Contractor shall conduct a preliminary review of the anticipated impact on the environment with reference to local requirements and those of multilateral lending agencies (such as the World Bank). This review shall identify potential negative impacts, discuss the extent to which they can be mitigated, and develop plans for a full environmental impact assessment if and when the project moves forward to the system-wide implementation stage. This shall include the identification of steps that will need to be undertaken by the Grantee subsequent to the completion of the pilot project and prior to system-wide implementation.

Deliverable: The Contractor shall prepare a preliminary environmental impact assessment report based on the work conducted in Task 8.

Task 9: U.S. Sources of Supply

The Contractor shall conduct an assessment of the availability of potential U.S. sources of supply for the hardware and software needed for the implementation of the pilot project as well as the system-wide implementation project. The Contractor shall provide a list of potential U.S. suppliers including business name, point of contact, address, telephone number, e-mail, and fax numbers.

Deliverable: The Contractor shall deliver a report on Task 9 that shall include a list of U.S. sources of supply by type of hardware and software.

Task 10: Draft and 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

Contractor shall submit to the Grantee a five (5) hard copies and one electronic copy of the Draft Report for review and comments. The Grantee shall provide written comments to the Contractor expeditiously. The Contractor shall then revise the Draft Report accordingly and submit five (5) hard copies and one electronic copy of the Final Report along with all annexes and prior task deliverables. The Final Report shall be prepared in accordance with Clause I of Annex II of the Grant Agreement.

Notes:

- (1) The Contractor is responsible for compliance with U.S. export licensing requirements, if applicable, in the performance of the Terms of Reference.**
- (2) The Contractor and the Grantee shall be careful to ensure that the public version of the Final Report contains no security or confidential information.**
- (3) The Grantee and USTDA shall have an irrevocable, worldwide, royalty-free, non-exclusive right to use and distribute the Final Report and all work product that is developed under these Terms of Reference.**

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 <i>[To be completed by USTDA]</i>	Feasibility Study	Technical Assistance	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	Publicly Traded Company
	Private Company
	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?	Yes <input type="checkbox"/> No <input type="checkbox"/>
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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?	Yes <input type="checkbox"/> No <input type="checkbox"/>
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If yes, U.S. Firm shall complete Attachment C for each subcontractor. Attached?	Yes <input type="checkbox"/> Not applicable <input type="checkbox"/>
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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.	
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Identify any specific information which is needed from the Grantee before commencing negotiations.	
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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 <i>[To be completed by USTDA]</i>	
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Activity Title <i>[To be completed by USTDA]</i>	
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Full Legal Name of U.S. Firm	
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Full Legal Name of Shareholder	
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Business Address of Shareholder (street address only)	
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Telephone number		Fax Number	
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Year Established (include any predecessor company(s) and year(s) established, if appropriate). Please attach additional pages as necessary.	
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Country of Shareholder’s Principal Place of Business	
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Please provide a list of directors and principal officers as detailed in Attachment A. Attached?	Yes
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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.	
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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 [To be completed by USTDA]	
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Activity Title [To be completed by USTDA]	
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Full Legal Name of Prime Contractor U.S. Firm ("U.S. Firm")	
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Full Legal Name of Subcontractor	
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Business Address of Subcontractor (street address only)	
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Telephone Number	
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Fax Number	
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Year Established (include any predecessor company(s) and year(s) established, if appropriate). Please attach additional pages as necessary.	
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Subcontractor Point of Contact

Name	Surname	
	Given Name	

Address	
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Telephone	
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Fax	
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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	