

**REQUEST FOR PROPOSALS**

**FEASIBILITY STUDY FOR THE**

**CEL SOLAR PHOTOVOLTAIC POWER PILOT PROJECT IN EL SALVADOR**

**Submission Deadline: 2:00 PM**

**LOCAL TIME (SAN SALVADOR, EL SALVADOR)**

**NOVEMBER 9, 2011**

**Submission Place: Ing. Carlos Rivera**  
**Unidad de Adquisiciones y Contrataciones Institucional**  
**Comisión Ejecutiva Hidroeléctrica del Río Lempa (CEL)**  
**9a. Calle Poniente No. 950**  
**Centro de Gobierno, San Salvador**  
**El Salvador**  
**Phone: + (503) 2211-6000**

**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.**

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## **SECTION 1: INTRODUCTION**

The U.S. Trade and Development Agency (“USTDA”) has provided a grant in the amount of US\$267,000 to the Comisión Ejecutiva Hidroeléctrica del Río Lempa (“CEL”) (the “Grantee”), of El Salvador (the “Host Country”) in accordance with a grant agreement dated August 29, 2011 (the “Grant Agreement”) to fund a feasibility study (“Feasibility Study”) for the CEL Solar Photovoltaic Power Pilot Project (the “Project”). This Feasibility Study will provide the Grantee with recommendations to enable the development of a 3 MW grid-connected solar photovoltaic power generation pilot project in El Salvador. The Grant Agreement is attached at Annex 4 for reference. The Grantee is soliciting technical proposals from qualified U.S. firms to provide expert consulting services to perform the Feasibility Study.

### **1.1 BACKGROUND SUMMARY**

The Government of El Salvador is committed to diversifying the country’s energy resources to meet increasing demand for energy by using renewable energy technologies. Recognizing the need to develop long-term, sustainable energy resources, the Government of El Salvador is facilitating the development of renewable power plants and solar power is expected to play an important role in El Salvador’s non-hydro renewable energy matrix. As part of its energy generation diversification strategy, the Grantee is planning to develop a 3 MW grid-connected solar photovoltaic power generation pilot project in El Salvador.

The Feasibility Study will allow the Grantee to compile solar resource data, assess solar photovoltaic technologies, conduct a preliminary conceptual design of the Project, and draft legal documents and agreements for Project implementation. The Grantee intends to co-locate the Project on the grounds of one of its existing hydroelectric power plants in northern El Salvador. The Project is expected to lead to the development of additional solar photovoltaic power projects in El Salvador.

The Project supports the Energy and Climate Partnership of the Americas and the Central American Renewable Energy Forum.

A background Definitional Mission is provided for reference in Annex 2.

### **1.2 OBJECTIVE**

The objective of the CEL Solar Photovoltaic Power Pilot Project Feasibility Study is to determine the technical, economic, and financial viability of a 3 MW grid-connected solar photovoltaic power generation pilot project in El Salvador.

The Terms of Reference (“TOR”) for this Feasibility Study are attached as Annex 5.

### 1.3 PROPOSALS TO BE SUBMITTED

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

The amount for the contract has been established by a USTDA grant of US\$267,000. **The USTDA grant of US\$267,000 is a fixed amount. Accordingly, COST will not be a factor in the evaluation and therefore, cost proposals should not be submitted.** Upon detailed evaluation of technical proposals, the Grantee shall select one firm for contract negotiations.

### 1.4 CONTRACT FUNDED BY USTDA

In accordance with the terms and conditions of the Grant Agreement, USTDA has provided a grant in the amount of US\$267,000 to the Grantee. The funding provided under the Grant Agreement shall be used to fund the costs of the contract between the Grantee and the U.S. firm selected by the Grantee to perform the TOR. The contract must include certain USTDA Mandatory Contract Clauses relating to nationality, taxes, payment, reporting, and other matters. The USTDA nationality requirements and the USTDA Mandatory Contract Clauses are attached at Annexes 3 and 4, respectively, for reference.

## **SECTION 2: INSTRUCTIONS TO OFFERORS**

### **2.1 PROJECT TITLE**

The Project is called the "CEL Solar Photovoltaic Power Pilot 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 DEFINITIONAL MISSION REPORT**

USTDA sponsored a Definitional Mission to address technical, financial, sociopolitical, environmental, and other aspects of the proposed Project. A copy of the report is 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 Study will be funded under a grant from USTDA. The total amount of the grant is not to exceed US\$267,000.

## **2.6 RESPONSIBILITY FOR COSTS**

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

## **2.7 TAXES**

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

## **2.8 CONFIDENTIALITY**

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

## **2.9 ECONOMY OF PROPOSALS**

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

## **2.10 OFFEROR CERTIFICATIONS**

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

## **2.11 CONDITIONS REQUIRED FOR PARTICIPATION**

Only U.S. firms are eligible to participate in this tender. However, U.S. firms may utilize subcontractors from the Host Country for up to 20 percent of the amount of the USTDA grant for specific services from the TOR identified in the subcontract. USTDA's nationality requirements, including definitions, are detailed in Annex 3.

## **2.12 LANGUAGE OF PROPOSAL**

All proposal documents shall be prepared and submitted in English and Spanish.

## **2.13 PROPOSAL SUBMISSION REQUIREMENTS**

The Cover Letter in the proposal must be addressed to:

**Ing. Carlos Rivera**  
**Unidad de Adquisiciones y Contrataciones Institucional (UACI)**  
**Comisión Ejecutiva Hidroeléctrica del Río Lempa (CEL)**  
**9a. Calle Poniente No. 950**  
**Centro de Gobierno, San Salvador**  
**El Salvador**  
**Phone: + (503) 2211-6000**

**An original in English, an original in Spanish, one (1) copy in English, and three (3) copies in Spanish of your proposal must be received at the above address no later than 2:00 PM, on November 9, 2011.**

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**

Each 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 "original" or "copy number x"; the original in English, the original in Spanish, one (1) copy in English, and three (3) copies in Spanish should be collectively wrapped and sealed, and clearly labeled.

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

## **2.15 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.

## **2.16 EFFECTIVE PERIOD OF PROPOSAL**

The proposal shall be binding upon the Offeror for ninety (90) days after the proposal due date, and the 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.

## **2.17 EXCEPTIONS**

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

## **2.18 OFFEROR QUALIFICATIONS**

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

## **2.19 RIGHT TO REJECT PROPOSALS**

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

## **2.20 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.

## **2.21 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 and, in all cases, the Grantee will be the judge as to whether a proposal has or has not satisfactorily met the requirements of this RFP.

## **2.22 COMPLETE SERVICES**

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

## **2.23 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\$267,000, which is a fixed amount.

Offerors shall submit one (1) original in English, one (1) original in Spanish, one (1) copy in English, and three (3) copies in Spanish 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,
- Company Information,
- 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 COMPANY INFORMATION**

For convenience, the information required in this Section 3.2 may be submitted in the form attached in Annex 6 hereto.

### **3.2.1 Company Profile**

Provide the information listed below relative to the Offeror's firm. If the Offeror is proposing to subcontract some of the proposed work to another firm(s), the information below must be provided for each subcontractor.

1. Name of firm and business address (street address only), including telephone and fax numbers.
2. Year established (include predecessor companies and year(s) established, if appropriate).
3. Type of ownership (e.g. public, private or closely held).
4. If private or closely held company, provide list of shareholders and the percentage of their ownership.
5. List of directors and principal officers (President, Chief Executive Officer, Vice-President(s), Secretary and Treasurer; provide full names including first, middle and last). Please place an asterisk (\*) next to the names of those principal officers who will be involved in the Feasibility Study.
6. If Offeror is a subsidiary, indicate if Offeror is a wholly-owned or partially-owned subsidiary. Provide the information requested in items 1 through 5 above for the Offeror's parent(s).
7. Project Manager's name, address, telephone number, e-mail address and fax number.

### **3.2.2 Offeror's Authorized Negotiator**

Provide 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.

### **3.2.3 Negotiation Prerequisites**

1. Discuss any current or anticipated commitments which may impact the ability of the Offeror or its subcontractors to complete the Feasibility Study as proposed and reflect such impact within the project schedule.
2. Identify any specific information which is needed from the Grantee before commencing contract negotiations.

### 3.2.4 Offeror's Representations

If any of the following representations cannot be made, or if there are exceptions, the Offeror must provide an explanation.

1. Offeror is a corporation [*insert applicable type of entity if not a corporation*] duly organized, validly existing and in good standing under the laws of the State of \_\_\_\_\_. The Offeror 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 Feasibility Study. The Offeror 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. The Offeror has included, with this proposal, a certified copy of its Articles of Incorporation, and a certificate of good standing issued within one month of the date of its proposal by the State of \_\_\_\_\_.
2. Neither the Offeror nor any of its principal officers have, within the three-year period preceding this RFP, 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 Offeror, 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 Offeror. The Offeror, 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 Offeror 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 Offeror has not had filed against it an involuntary petition under any bankruptcy, insolvency or similar law.

The selected Offeror shall notify the Grantee and USTDA if any of the representations included in its proposal are no longer true and correct at the time of its entry into a contract with the Grantee. USTDA retains the right to request an updated certificate of good standing from the selected Offeror.

### **3.2.5 Subcontractor Profile**

1. Name of firm and business address (street address only), including telephone and fax numbers.
2. Year established (include predecessor companies and year(s) established, if appropriate).

### **3.2.6 Subcontractor's Representations**

If any of the following representations cannot be made, or if there are exceptions, the Subcontractor must provide an explanation.

1. Subcontractor is a corporation [*insert applicable type of entity if not a corporation*] duly organized, validly existing and in good standing under the laws of the State 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 Offeror is selected, to execute and deliver a subcontract to the Offeror for the performance of the Feasibility Study and to perform the Feasibility Study. 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 three-year period preceding this RFP, 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.

The selected subcontractor shall notify the Offeror, Grantee and USTDA if any of the representations included in this proposal are no longer true and correct at the time of the Offeror's entry into a contract with the Grantee.

### **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 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 or larger in scope than 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 and their corresponding assigned weights:

1. Offeror's experience with solar power project design and development, and experience of key personnel in the following areas (25%):
  - Project management of international energy projects
  - Technical/engineering analysis of solar power projects
  - Financing of international energy projects
2. Offeror's experience conducting similar feasibility studies for international solar power projects (25%)
3. Adequacy, soundness, and thoroughness of the Technical Approach and Work Plan (20%)
4. Offeror's experience with regulatory and environmental issues related to solar power projects (15%)
5. Offeror's experience and ability to work in the Spanish language (10%)
6. Offeror's experience in El Salvador and/or Central America (5%)

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

Price will not be a factor in Contractor selection.

**ANNEX 1**

**FEDBIZOPPS ANNOUNCEMENT**

Ing. Carlos Rivera, Unidad de Adquisiciones y Contrataciones Institucional (UACI),  
Comisión Ejecutiva Hidroeléctrica del Río Lempa (CEL), 9a. Calle Poniente No. 950,  
Centro de Gobierno, San Salvador, El Salvador, Phone: + (503) 2211-6000

B – El Salvador: CEL Solar Photovoltaic Power Pilot Project Feasibility Study

POC: Robin Yavuz, USTDA, 1000 Wilson Boulevard, Suite 1600, Arlington, VA 22209-3901, Tel: (703) 875-4357, Fax: (703) 875-4009. CEL Solar Photovoltaic Power Pilot Project Feasibility Study, El Salvador.

The Grantee (Comisión Ejecutiva Hidroeléctrica del Río Lempa, "CEL") 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 conduct a Feasibility Study for the CEL Solar Photovoltaic Power Pilot Project.

The objective of the CEL Solar Photovoltaic Power Pilot Project Feasibility Study is to determine the technical, economic, and financial viability of a 3 MW grid-connected solar photovoltaic power generation pilot project in El Salvador. The Feasibility Study will allow the Grantee to compile solar resource data, assess solar photovoltaic technologies, conduct a preliminary conceptual design of the Project, and draft legal documents and agreements for Project implementation.

The Terms of Reference ("TOR") for the Feasibility include the following tasks: 1) Kick-Off Meeting and Inception Report; 2) Technical Analysis; 3) Preliminary Environmental Impact Assessment; 4) U.S. Sources of Supply; 5) Financial Analysis; 6) Risk Analysis; 7) Regulatory Review; 8) Development Impact Assessment; 9) Implementation Plan; 10) Financing Plan; and 11) Final Report.

The U.S. firm selected will be paid in U.S. dollars from a \$267,000 grant to the Grantee from the U.S. Trade and Development Agency ("USTDA").

A detailed Request for Proposals ("RFP"), which includes requirements for the Proposal, the Terms of Reference, and a background definitional mission report are available from USTDA, at 1000 Wilson Boulevard, Suite 1600, Arlington, VA 22209-3901. To request the RFP in PDF format, please go to:

<https://www.ustda.gov/businessopps/rfpform.asp>.

Requests for a mailed hardcopy version of the RFP may also be faxed to the IRC, USTDA at 703-875-4009. In the fax, please include your firm's name, contact person, address, and telephone number. Some firms have found that RFP materials sent by U.S. mail do not reach them in time for preparation of an adequate response. Firms that want USTDA to use an overnight delivery service should include the name of the delivery service and your firm's account number in the request for the RFP. Firms that want to send a courier to USTDA to retrieve the RFP should allow one hour after faxing the request to USTDA before scheduling a pick-up. Please note that no telephone requests for

the RFP will be honored. Please check your internal fax verification receipt. Because of the large number of RFP requests, USTDA cannot respond to requests for fax verification. Requests for RFPs received before 4:00 PM will be mailed the same day. Requests received after 4:00 PM will be mailed the following day. Please check with your courier and/or mail room before calling USTDA.

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

Interested U.S. firms should submit their Proposal in English and Spanish directly to the Grantee by 2:00 PM (local time in San Salvador, El Salvador), November 9, 2011, at the above address. Evaluation criteria for the Proposal are included in the RFP. Price will not be a factor in contractor selection, and therefore, cost proposals should NOT be submitted. The Grantee reserves the right to reject any and/or all Proposals. The Grantee also reserves the right to contract with the selected firm for subsequent work related to the project. The Grantee is not bound to pay for any costs associated with the preparation and submission of Proposals.

**ANNEX 2**

**BACKGROUND DEFINITIONAL MISSION REPORT**



## **The U.S. Trade and Development Agency**

The U.S. Trade and Development Agency (USTDA) advances economic development and U.S. commercial interests in developing and middle-income countries. The agency funds various forms of technical assistance, early investment analysis, training, orientation visits and business workshops that support the development of a modern infrastructure and a fair and open trading environment.

USTDA's strategic use of foreign assistance funds to support sound investment policy and decision-making in host countries creates an enabling environment for trade, investment, and sustainable economic development. Operating at the nexus of foreign policy and commerce, USTDA is uniquely positioned to work with U.S. firms and host countries in achieving the agency's trade and development goals. In carrying out its mission, USTDA gives emphasis to economic sectors that may benefit from U.S. exports of goods and services.

**1000 Wilson Boulevard • Suite 1600 • Arlington, VA 22209-3901**

Phone: 703-875-4357 • Fax 703-875-4009 • Web site: [www.ustda.gov](http://www.ustda.gov) • email: [info@ustda.gov](mailto:info@ustda.gov)

## **EXECUTIVE SUMMARY**

In April of 2009, U.S. President Barack Obama proposed an Energy and Climate Partnership of the Americas (ECPA). His vision is that ECPA "brings countries across the Western Hemisphere together to facilitate the acceleration of clean energy development and deployment, advance energy security, and reduce energy poverty by sharing best practices, encouraging investment, and cooperating on technology research, development and deployment." A key pillar to achieving this vision is clean energy.

In line with this mission, USTDA commissioned a "Definitional Mission: Latin America and the Caribbean: Solar Energy Projects". The countries visited included: Colombia, El Salvador and Guatemala.

USTDA desires to find ways to provide assistance to two solar energy project opportunities that serve the energy needs of the host country, and have potential to use U.S. vendors and services, and that qualify for USTDA assistance. Assistance may take the form of feasibility studies to support international bidding and financing, technical assistance and capacity development to improve the enabling environment, or assistance arranging contact with U.S. vendors and financial institutions.

### **El Salvador**

The Salvadoran electricity sector is divided into generation, transmission, and distribution subsectors. According to El Salvador Energy Commission, during 2008, electricity generation in the country reached 5,566.2 GWh. The same year, the Country's installed electric power generation capacity reached 1,371.8 MW, of which 51% percent were thermal, 34% hydro power plants, and the remaining 15% geothermal.

El Salvador is the largest producer of geothermal energy in Central America. The state-owned Rio Lempa Executive Hydroelectric Commission (CEL) manages and operates the country's hydroelectric and geothermal plants, which account for approximately 65 percent of the total energy produced. With the exception of hydroelectric generation, which is almost totally owned and operated by CEL, the rest of the generation capacity is in private hands.

## GLOBAL SOLAR ENERGY MARKET

The Solar Energy Industry Association (SEIA) developed a very extensive report "U.S. Solar Energy Trade Assessment 2010." The assessment analyzes the trade flows and domestic content for solar energy-related goods and services in the United States. The report is confidential; the DM Contractor reproduced, with permission from SEIA, some key areas of that report. The full version can be found at: [http://www.seia.org/galleries/default-file/Solar\\_Trade\\_Assessment.pdf](http://www.seia.org/galleries/default-file/Solar_Trade_Assessment.pdf). The SEIA information includes breakdowns of domestic and imported components of solar plant technologies. Their careful isolation of components allowed the DM Contractor to provide meaningful estimates of total capital costs and probably U.S. exports.

This study [the "U.S. Solar Energy Trade Assessment 2010"] is a comprehensive analysis of trade flows and domestic value creation in the U.S. solar energy industry based on data from the calendar year 2009. Many sources of data and analysis focusing on solar trade balance issues exist. To date, however, most of these efforts have taken a fairly simplistic view of solar products. Most focus exclusively on individual product components, such as solar modules, analyzing what proportion of those components are manufactured domestically.

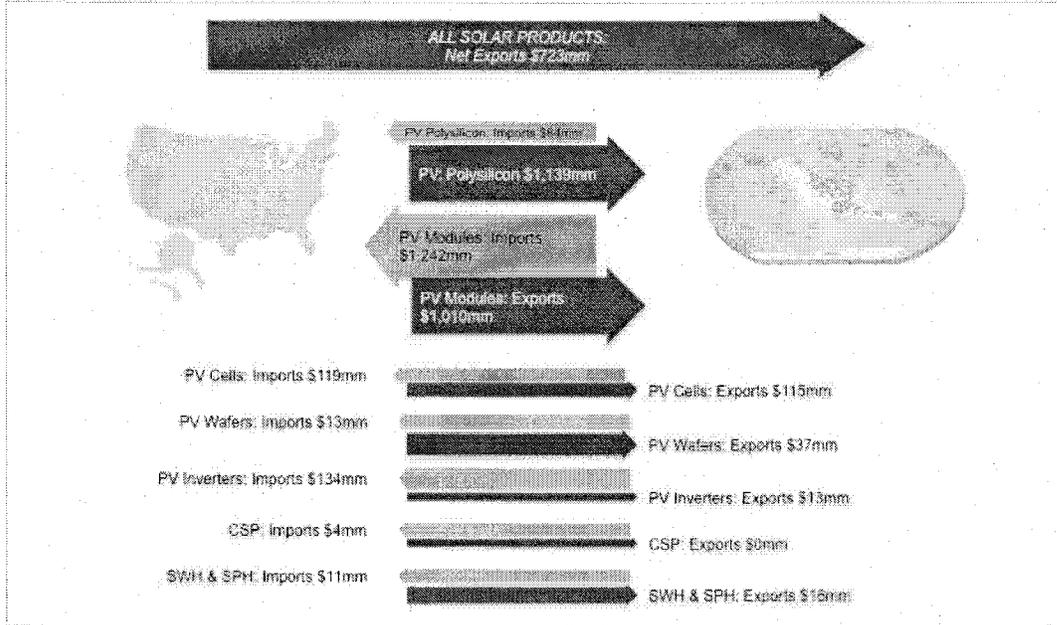
The overall trend for the clean-energy market continued to be one of growth and expansion in 2010. That year the U.S. solar industry employed 93,000 solar workers. That number is expected to grow by 26% by August 2011. Combined global revenue for solar PV, wind power, and biofuels surged 35.2 percent over the prior year, growing from \$139.1 billion to \$188.1 billion, according to the Clean Energy Trends 2011 report issued by Clean Edge Inc. According to their research, the global market for solar photovoltaics (PV) has expanded from just \$2.5 billion in 2000 to \$71.2 billion in 2010, representing a compound annual growth rate of 39.8 percent. But, according to Reuters News, U.S. share of worldwide photovoltaic solar installations slipped to 5 percent last year from 6.5 percent in 2009 due to booming growth in Germany and Italy, where solar players enjoy generous government incentives.

In manufacturing, the United States increased its production of solar components substantially in 2010. Production of solar modules rose 62 percent, while wafer production grew 97 percent and cell manufacturing rose 81 percent.

However, stiff competition from low-cost regions such as China forced three domestic PV facilities to close last year, including a BP Solar plant in Maryland, Intel-backed SpectraWatt's New York facility, and Evergreen Solar's factory in Massachusetts.

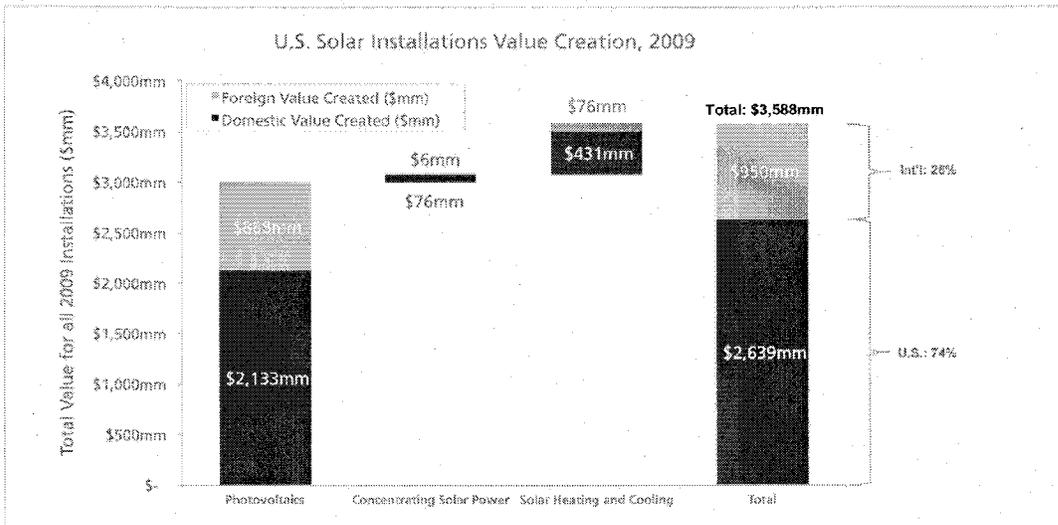
U.S. PV-related imports in 2009 totaled \$1.6 billion while exports totaled \$2.3 billion, making the U.S. a net exporter of PV goods by \$723 million. Key export goods included polysilicon wafers and modules, while modules and inverters were the most prominent imported goods. China and Mexico were the locations that contributed the most to imports, while Germany, Japan, and China were the most prominent export destinations.

Figure 5-2: Solar Industry Trade Flows, 2009



Source: GTM Research, International Trade Commission

Figure 5-1: Solar Installations Value Creation, 2009

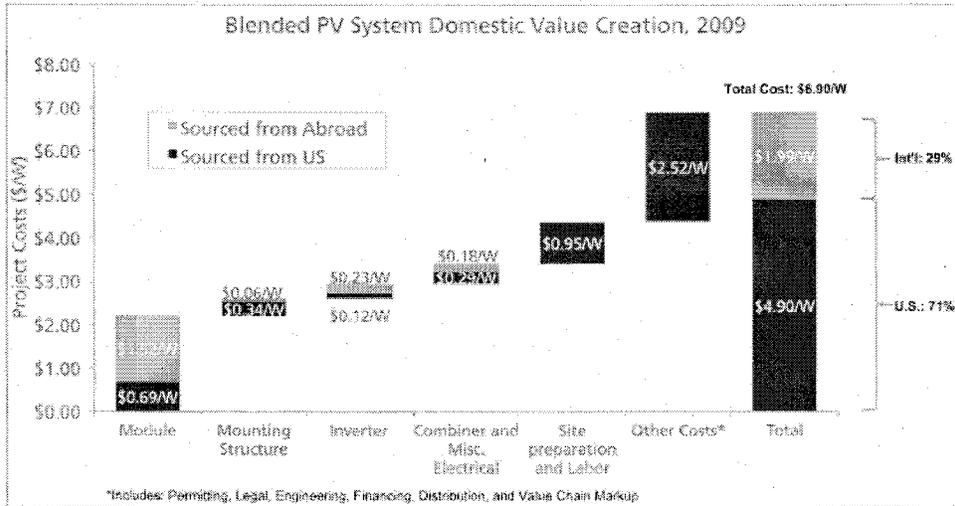


Source: GTM Research

## PHOTOVOLTAICS (PV)

71% of total PV system value was created domestically in 2009. The domestic value was primarily created in the areas of module manufacturing, site preparation, labor, soft costs, and value chain markup for the module distributor and system installer.

Figure 1-4: PV System Domestic Value Creation, 2009

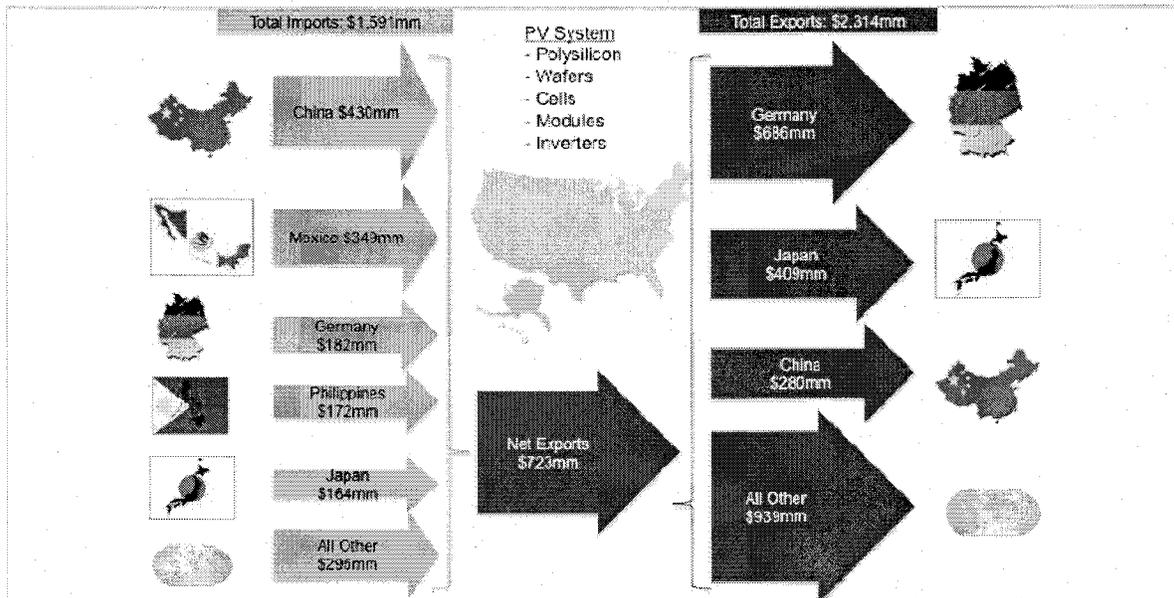


Source: GTM Research

### Total PV Trade Flows

By summing trade flows for the individual components assessed, one arrives at total PV import and export volumes, which puts 2009 PV exports at \$2.3 billion. This compares to imports of \$1.6 billion, which yields net PV exports of \$722.8 million. As shown, the primary export goods for PV in 2009 were polysilicon and modules, while inverters and modules were the main components imported. In terms of net exports, polysilicon was by far the most prominent, at \$1.1 billion for 2009, while modules and inverters had the highest trade deficit, at \$232.0 million and \$121.0 million of net imports respectively.

Figure 1-5: PV: Imports and Exports by Source/Destination, 2009



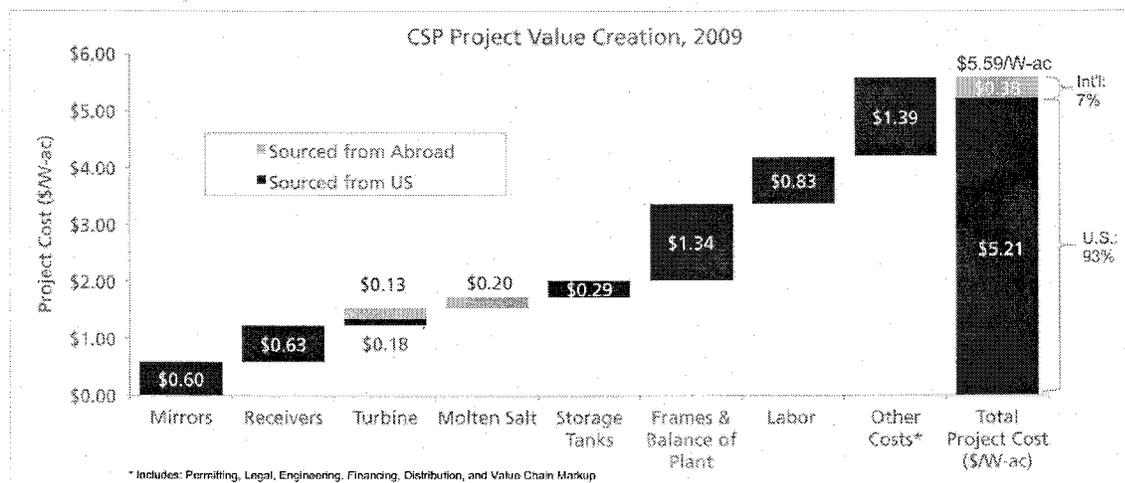
Source: GTM Research

## CONCENTRATING SOLAR POWER (CSP)

93% of the total value of 2009 CSP installations in the U.S. was created domestically. Materials sourced from other countries were molten salt (used for thermal storage), and turbines.

U.S. imports of CSP-related goods totaled \$3.8 million, coming from Germany. The U.S. did not export any CSP-related goods in 2009 in significant quantities. Looking forward, trade flows for CSP should remain relatively small, as many of the components are low value per pound commodities (i.e. steel, concrete, mirrors), where the economics favor domestic sourcing to avoid transport costs.

Figure 3-4: CSP Project Value Creation, 2009



Source: GTM Research

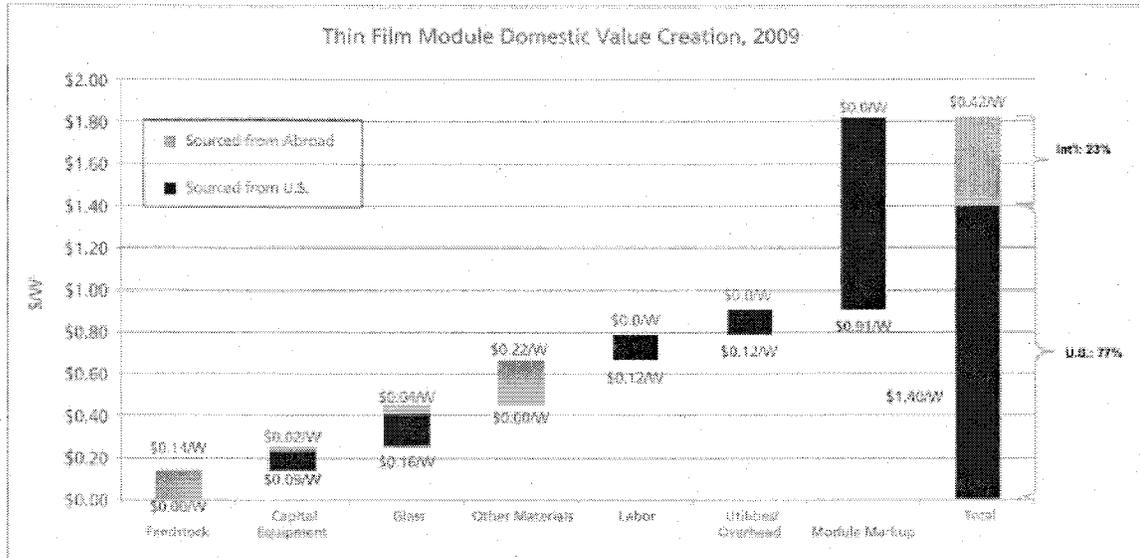
## CSP Trade Flow Analysis

In 2009, the U.S. did not export any components for CSP projects in the rest of the world. The U.S. did import mirrors for the Holaniku project from Alanod Aluminium-Veredlung in Germany. Schott receiver tubes are scheduled for a 50-MW CSP project in Morocco. The effective value of the imports was estimated at \$3.8 million. Overall, the dollar flows for CSP projects are miniscule compared to the trade flows from PV.

## THIN FILM

Total thin film module costs (including module markup) for 2009 amount to \$1.82/W; of this, the cost to the producer is estimated at \$0.91/W, while the remaining \$0.91/W (50%) is markup at the module level. This may seem unreasonably high; however, it is in accordance with CdTe module economics in 2009, as the dominant CdTe producer recorded gross margins in excess of 50% throughout 2009, due to a relatively high price for the alternative PV technology (crystalline Si) and an industry-leading module manufacturing cost. \$1.40/W (77%) of the value in U.S.-installed thin film modules was sourced domestically, in contrast to only 24% for crystalline silicon modules.

Figure 2-8: Percentage of Value Created Domestically, U.S.-installed Thin Film Module, 2009



Source: GTM Research

The 77% domestic value of thin film modules installed in 2009, compared to only 24% for crystalline silicon, may lead one to mistakenly conclude that thin film manufacturing is inherently more U.S.-based. This is not true, and is more a function of the small sample size of prominent thin film manufacturers compared to crystalline silicon.

To illustrate this, a crystalline silicon module manufactured by a highly integrated domestic manufacturer such as Solarworld (which produces wafers, cells, and modules in the U.S.) would have domestic value on par with that of a U.S.-produced thin film module. As such, there is nothing intrinsically American about thin film manufacturing, or intrinsically foreign about crystalline silicon production; it just so happens that the landscape of manufacturers of crystalline silicon PV is distributed across the globe and is extremely competitive, while few thin film firms have thus far been able to compete with the U.S.-based leader.

### **Concept**

The Comisión Ejecutiva Hidroeléctrica del Río Lempa (CEL), the national utility of El Salvador, has requested USTDA assistance to conduct a Feasibility Study for a 3-MW grid-connected solar park. CEL owns 472 MW of hydroelectric capacity, comprising about 32% of the nation's total generating capacity. CEL desires to diversify into renewable energy to reduce its exposure to El Niño events, which reduce rainfall, and to global climate change, which may change rainfall patterns. They consider wind and solar to be ideal, because wind velocities increase and cloud cover decreases during El Niño, making wind and solar complementary to hydroelectric generation.

A previous USTDA Definitional Mission to El Salvador identified a possible 1-MW solar photovoltaic (SPV) project for CEL. CEL has installed a demonstration project of 24 KW on the roof of its headquarters building in San Salvador. The rooftop plant has side-by-side sets of panels in three SPV technologies: mono-crystalline, poly-crystalline, and amorphous silicon cells. This small demo project has been very successful. The arrays have been reliable and have actually produced 12% higher output than models predicted. The first two technologies have essentially identical performance, with the amorphous silicon set producing about 5% less power but at lower cost.

With the favorable results from the test installation, CEL has decided to proceed with a larger, 3-MW project. A bankable Feasibility Study by a U.S. contractor can help CEL optimize the project design and tender documents and improve the probability of favorable financing terms.

### **Project Description**

CEL is satisfied that SPV is a viable option for them and desires to proceed directly to a larger project targeting 10 MW for year five. CEL estimates that it will procure 2–3 MW as a second project supported by the USTDA feasibility study. They will pair this project with a wind project in the range of 30 – 50 MW; they are still compiling information needed to support this wind capacity. They have used a rough estimate of 15% as a satisfactory level of diversification to arrive at a nominal 75 MW generated by non-hydro renewable sources. If USTDA approves the project for a feasibility study, the U.S. consultant will be tasked to perform a study to determine an optimum level of diversification, considering the El Niño and climate change effects mentioned above, system reliability requirements, capacity reserve levels, and expected demand growth. The output of that study should help set the size of the wind and solar projects needed.

The U.S. consultant should also be tasked to assist in site selection. Cloud cover precludes sites in most of southern and central El Salvador. The best insolation areas in Northern El Salvador are ruggedly hilly and limited by forests and small agriculture. Conveniently, CEL has four candidate sites at their existing storage lakes and hydroelectric plants at their plants named 5 de Noviembre, Cerrón Grande, Guajoyo, and 15 de Septiembre. The DM visited the first two sites, located approximately 25 km apart in north

central El Salvador, about 70 km northwest of San Salvador. The sites are all owned by CEL and permitted as industrial sites. Due to the low environmental impact of this technology, CEL expects the scope and cost of the environmental impact study to be minimal. The sites are ideal in the sense that they have existing operating stations, security facilities, and interconnect substations with adequate capacity to handle an increase of 50 MW of power transmission. They have also established good relations with local populations by providing jobs, security, schools, recreational facilities, and grazing access to CEL lands surrounding the reservoirs.

Acting partly from the advice of the previous DM, CEL has been considering several plots of flat, cleared land at each site. The plots range from 2 to 8 hectares. At an approximate 2 hectares per MW of capacity, a 3-MW plant might have to be distributed over plots at two or more sites. Considering that solar PV technologies are inherently modular in nature, that might be the optimum solution. Other options include the possibility of installing the panels in areas of shallow water above the dams, clearing scrub brush and vacant buildings to enlarge some plots, and acquiring land adjacent to hydro plant property on hills inclined toward the south. The decision on siting plants will probably be governed by any environmental permit issues and solar resource assessment.

Despite the considerable share of electricity generation from renewable energy sources, it is the declared aim of the Government of El Salvador to add further renewable power from solar, wind, biomass and small hydro plants over the next years. To stimulate this development, the government passed the Fiscal Incentives Law for the Promotion of Renewable Energy in 2007 which provides tax and customs duties exemptions for projects based on renewable energies. Furthermore, the Consejo Nacional de Energia (CNE) was formed in 2009 to make recommendations for legislation and regulatory policies in energy. The specific objectives and strategic lines of the National Energy Policy include, among others, mainly the diversification and increase of energy sources.

#### **Capabilities and Commitment of the Project Sponsor**

CEL is a large and capable utility company, with 472 MW of existing generation. CEL has already installed a 24-KW set of solar PV test panels on its office.

CEL has stated that it will provide support to a feasibility study contractor including the use of an office, guides and security escorts, administrative support, and transportation.

#### **Financing**

CEL has an excellent credit record by itself. The sovereign guarantee requires approval of the Assembly and a lengthy processing time. Loans by public funds such as U.S. EXIM Bank and Inter-American Development Bank would probably require the sovereign guarantee. The IDB is not inclined to support the project, being more likely to support renewable energy in El Salvador through private projects than public ones. The DM met with representatives of the Central American Bank, however, who stated that they would be likely to accept the credit of CEL for favorable interest rates, a 15-year term, and 80/20 leverage.

The Feasibility Study for a CEL solar project should be tasked to develop a financing plan with full documentation meeting the standards of likely investors, donors, and lenders. The Study should also include an Implementation Plan that is conditional for timing and phasing on the results of the new legislation due in 2011.

### **Capital Cost**

However, according to the Solar Energy Industries Association (SEIA), 2009 marked a second year of major price declines for PV modules. Prices have fallen to \$1.85-\$2.25 per watt from \$3.50-\$4.00 per watt in mid-2008, a drop of over 40 percent. With module prices accounting for up to half of the installed cost of a PV system, these prices are beginning to put downward pressure on system prices. Average installed cost fell 15 percent from 2009 to 2011, revising the estimate to \$17.6 million. Using an existing CEL site, with site facilities and permits, a substation, and transmission access may lower the cost about \$2 million, giving a final estimate of \$15.6 million with silicon module technology.

Thin film PV modules prices have fallen more than silicon modules; they now cost about \$1.82 per watt. Using SEIA data from 2009, the total price estimate for this plant using thin-film modules would be \$6.51 per watt, or about \$19.5 million. Prices have decreased approximately 15% since then, revising the estimate to \$16.6. Using an existing CEL site, with site facilities and permits, a substation, and transmission access may lower the cost about \$2 million, giving a final estimate of \$14.6 million with thin film technology.

The proposed feasibility study will take about 5 months and cost about \$267,000.

### **U.S. Export Potential**

U.S. vendors of equipment and services are fully competitive in the region. There are now hundreds of potential suppliers of silicon modules; no one company can be singled out as having a pricing or geographic advantage. For thin-film modules, however, the leading U.S. producers are First Solar, Stion, and Nanosolar. Capital costs estimates developed above are in the range of \$14.6-15.6 million. On a site with existing substation and transmission access, EPC services will be less than \$500,000. PV modules will comprise approximately 75% of the remaining cost, or \$10.6 million.

### **Foreign Competition**

If a foreign developer wins the competition for the project, U.S. components may be included in the materials supplied. For a solar PV silicon technology, U.S. component exports are difficult to estimate, as several countries might be involved in the module production, particularly U.S. polycrystalline silicon. Using SEIA data, the U.S. sourcing for silicon PV would be approximately \$0.69 per watt, or about \$2.1 million. For thin-film technology, U.S. sourcing would be about \$1.40 per watt, or about \$4.1 million. For a PV plant, essentially all site work, labor, engineering, and design would be sourced domestically.

Foreign competition is intense anywhere in the world; there is no hemisphere advantage for the U.S. Merging estimates of a U.S. company winning the bidding and the probability that major components

would be U.S.-sourced leads to an estimate that U.S. exports would be approximately 40% of the \$14.6 plant total, or about \$5.8 million.

**Terms of Reference**

**[REFER TO ANNEX 5 OF THE RFP.]**

**Feasibility Study**

The Feasibility Study would require approximately 5 months, of which the longest task is anticipated to be the development of the Financing Plan. Total cost of the study is estimated at \$267,000.

**Task Completion Schedule**  
**Feasibility Study for CEL 3-MW Solar Plant**

TASK	Months	1	2	3	4	5
1.1 Inception Workshop		■				
1.2 Inception Report		■				
2.1 Review Existing Documentation		■	■			
2.2 Solar Resource and Site Assessment		■	■			
2.3 Comparative Analysis of Technologies			■	■		
2.4 Configuration and Conceptual Design			■	■		
3 Environmental Analysis				■	■	
4 U.S. Sources of Supply				■	■	
5 Financial Evaluation				■	■	
6 Project Risk Assessment					■	■
7.1 Permits				■	■	
7.2 Tariff Filing					■	■
8 Developmental Impact Assessment					■	■
9 Implementation Plan					■	■
10 Financing Plan					■	■
11 Final Report to Grantee and USTDA						■

**ANNEX 3**

**USTDA NATIONALITY REQUIREMENTS**



**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.

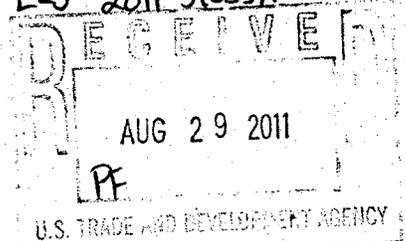
“Origin” means the place of production, through manufacturing, assembly or otherwise.

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

**ANNEX 4**

**USTDA GRANT AGREEMENT,  
INCLUDING MANDATORY CONTRACT CLAUSES**

ELS 2011-51033A



### 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 the Comisión Ejecutiva Hidroeléctrica del Río Lempa ("CEL") ("Grantee"). USTDA agrees to provide the Grantee under the terms of this Grant Agreement US\$267,000.00 ("USTDA Grant") to fund the cost of goods and services required for the preparation of a feasibility study ("Study") on the proposed CEL Solar Photovoltaic Power Pilot project ("Project") in El Salvador ("Host Country").

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MB  
CS: L2  
PP  
JW

#### 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 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.

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

### **(B) USTDA 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 the Contract for performance of the Study. The 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 (as defined in Clause I of Annex II), 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 thereunder, jointly or separately, without thereby incurring any responsibility or liability to such parties. Any approval or failure to approve by USTDA shall not bar the Grantee or USTDA from asserting

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

**(E) Grant Agreement Controlling**

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

**(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 December 31, 2012, 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; and (b) all funds made available under the Grant Agreement must be disbursed within four (4) years from the Effective Date.



## **9. USTDA Mandatory Clauses**

All contracts funded under this Grant Agreement shall include the USTDA mandatory clauses set forth in Annex II. 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 the 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 the 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 the 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, 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**

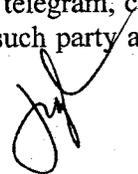
The Grantee agrees to maintain books, records, and other documents relating to the Study and the Grant Agreement adequate to demonstrate implementation of its responsibilities under the Grant Agreement, including the selection of contractors, receipt and approval of contract deliverables, and approval 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 the Host Country or USTDA and Grantee will be represented by the President of CEL. 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: Comisión Ejecutiva Hidroeléctrica del Río Lempa  
9a. Calle Poniente No. 950 Entre 15 y 17 Av. Norte  
Centro de Gobierno, San Salvador  
EL SALVADOR

Phone: + (503) 2211-6000  
Fax: + (503) 2207-1302

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 formal communications shall be in English, unless the parties otherwise agree in writing. Any informal communications may be in English or Spanish. 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.: 1111/121001  
Activity No.: 2011-51033A  
Reservation No.: 2011289  
Grant No.: GH201151289

#### **18. Termination**

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.

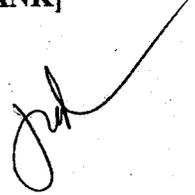
#### **19. Non-waiver of Rights and Remedies**

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.

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

A handwritten signature in black ink, appearing to be 'J. H.', is located in the upper right quadrant of the page.

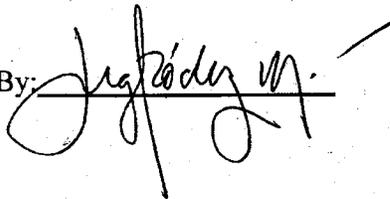
**IN WITNESS WHEREOF**, the Government of the United States of America and the Comisión Ejecutiva Hidroeléctrica del Río Lempa, each acting through its duly authorized representative, have caused this Grant Agreement to be signed in the English and Spanish languages in their names and delivered as of the day and year written below. While both the English and Spanish language versions are valid, the English language version shall govern.

**For the Government of the  
United States of America**

By: 

Date: August 29, 2011

**For the Comisión Ejecutiva  
Hidroeléctrica del Río Lempa**

By: 

Date: August 25, 2011

**Annex I – Terms of Reference**

**Annex II – USTDA Mandatory Clauses**

## Annex I

### **Terms of Reference**

#### Objective

The objective of the feasibility study ("Study") for the CEL Solar Photovoltaic Power Pilot Project ("Project") in El Salvador is to determine the technical, economic, and financial viability of a 3 MW grid-connected solar photovoltaic power generation pilot project in El Salvador. The Study will allow the Comisión Ejecutiva Hidroeléctrica del Río Lempa ("CEL") ("Grantee") to compile solar resource data, assess solar photovoltaic technologies, conduct a preliminary conceptual design of the Project, and draft legal documents and agreements for Project implementation.

#### General Considerations for Deliverables and Documents

The U.S. firm selected by the Grantee to perform the Study ("Contractor") shall undertake a quality control review process, including a technical and editorial review, of all deliverables and documents submitted to the Grantee to ensure readability, accuracy, and consistency. The interim deliverables specified in these Terms of Reference shall serve to keep the Grantee informed about the Contractor's work on the Study and to ensure that the Contractor's findings are acceptable to the Grantee before critical decisions are made on the Study. The Contractor shall submit monthly progress reports to the Grantee. The Contractor shall submit all deliverables and documents to the Grantee in English and Spanish.

#### Activities

Task 1: Kick-Off Meeting and Inception Report

##### Subtask 1.1: Kick-Off Meeting

The Contractor shall meet with the Grantee to discuss the details of the technical approach and work plan, including reporting requirements, the methodology for completing the Terms of Reference, and the working relationships between personnel engaged in the Study. The Contractor shall also conduct site inspections, obtain copies of available information, and make arrangements for the collection of field data, as needed.

The Grantee shall provide temporary working and meeting facilities to the Contractor. The Grantee shall also provide or make available all existing documentation, drawings, diagrams, and specifications relevant to the Study and the proposed Project site(s). The Grantee shall provide available insolation data, geotechnical studies, topographic studies, road studies, and transmission load flow studies. The Grantee shall provide data from the demonstration solar array that the Grantee has installed. The Grantee shall also provide copies of current Salvadoran government guidelines and policies for tariffs and the licensing of solar power generating plants.

#### Subtask 1.2: Inception Report

Following the kick-off meeting, the Contractor shall prepare an inception report that includes a list of attendees, topics discussed, and any agreed-upon refinements in the technical approach and work plan. As part of the inception report, the Contractor shall perform a gap analysis based on the available information.

#### Interim Deliverable No. 1:

The Contractor shall prepare and submit to the Grantee an interim report detailing the findings from Task 1.

#### Task 2: Technical Analysis

##### Subtask 2.1: Available Documentation

The Contractor shall review available information and existing studies regarding the technical, economic, and environmental aspects of the Project. The Contractor shall review any solar resource assessments conducted by the Grantee.

##### Subtask 2.2: Solar Resource and Site Assessments

The Contractor shall compile the following solar resource data for the proposed Project site(s):

- Typical mean year data;
- Average daily and monthly solar insolation;
- Atmospheric pressure;
- Sun elevation angle;
- Estimates for direct normal irradiance (kWh/m<sup>2</sup>) and diffuse horizontal irradiance (kWh/m<sup>2</sup>);
- Dry-bulb temperature (°C);
- Wind speed (m/s); and
- Quantify data uncertainties.

The accuracy and completeness of the solar resource data shall be adequate to meet the standards and requirements of potential lenders and investors.

The Contractor is not required to install and monitor meteorological instruments to assess the solar resource. The Grantee shall provide or shall make available to the Contractor all previous solar resource assessment data for the proposed Project site(s). The Contractor shall verify that the Grantee's solar resource assessment data is consistent with the solar resource data on El Salvador that is available through global meteorological databases, such as those from the National Aeronautics and Space Administration, *meteonorm*, and the National Renewable Energy Laboratory.

##### Subtask 2.3: Preliminary Comparative Analysis of Solar Photovoltaic Technologies

The Contractor shall utilize geographical, climate, topographical, technical, and economic variables to analyze and recommend the optimal solar photovoltaic technology to be used at the proposed Project site(s).

The comparative analysis shall include solar photovoltaic, including monocrystalline silicon modules, polycrystalline silicon modules, amorphous silicon modules, thin-film modules, and solar concentrating photovoltaic technologies.

The Contractor shall use the data generated in Subtask 2.2 and shall estimate the following:

- Preliminary array per technology and available land to maximize energy production;
- Energy production estimates per technology on an annual and monthly basis;
- Average operation and maintenance ("O&M") costs per technology;
- Return on investment and net present value per technology, considering local energy prices;
- Recommend the optimal technology; and
- Recommend the optimal Project site or combination of sites.

#### Subtask 2.4: Technical Configuration and Preliminary Conceptual Design

The Contractor shall evaluate the technical, environmental, and economic aspects of the optimal solar photovoltaic technology to determine a feasible and appropriate preliminary conceptual design of the Project.

The Contractor shall analyze the following, depending on if the optimal technology is a solar photovoltaic array or a solar concentrating photovoltaic array:

- Provide the natural and minimum technical conditions under which the technical design has been done. Provide all parameters used for the design work to the Grantee.
- Determine the total solar photovoltaic or concentrating photovoltaic power system capacity that will be installed to adequately supply 3 MW. Provide calculations to show how it was done.
- Design and determine the size of the solar array, size of inverter string, cable sizes, and control and protection units. Provide all calculations.
- Provide the minimum specifications of the solar photovoltaic or concentrating photovoltaic power generation system components, including, but not limited to, solar modules, inverters, data logger, cables, and balance of system including the solar array mounting frame;
- Set out the general layout and arrangement of the solar photovoltaic or concentrating photovoltaic generation unit to provide safe and reliable operation.
- Identify and list all the tools and equipment that will be required to install and operate the solar photovoltaic or concentrating photovoltaic power generation unit.
- Develop a periodic maintenance plan.
- Assess and determine the skill requirements of the technicians that will operate the unit.

The Contractor shall also analyze additional Project components that may include, but are not limited to, the following:

- Racking system;
- Wiring for AC/DC systems;
- Security fencing;
- Metering equipment;
- Construction equipment;
- Temporary office buildings;
- Temporary storage facilities;
- Equipment access laneways on site property;
- Distribution lines to point of common coupling with the local distribution company; and
- Temporary laydown areas used for construction purposes.

Interim Deliverable No. 2:

The Contractor shall prepare and submit to the Grantee an interim report detailing the findings from Task 2.

Task 3: Preliminary Environmental Impact Assessment

The Contractor shall conduct a preliminary review of the Project's environmental impact and environmental compliance with reference to local requirements and those of multilateral development banks (such as the World Bank and Inter-American Development Bank). This review shall identify potential positive and negative impacts, discuss the extent to which negative impacts can be avoided or mitigated, and develop plans for a full environmental impact assessment in anticipation of the Project moving forward to the implementation stage. In particular, the Contractor shall identify any steps that the Grantee or other interested parties will need to undertake subsequent to the completion of the Study and prior to Project implementation.

The Contractor's assessment shall also include the following:

- Environmental description of the proposed Project site(s), in terms of the current physical, biological, socioeconomic, and landscape conditions;
- Calculation of the reduction of carbon dioxide emissions after Project implementation to support registration under the Clean Development Mechanism ("CDM").

Interim Deliverable No. 3:

The Contractor shall prepare and submit to the Grantee an interim report detailing the findings from Task 3.

Task 4: U.S. Sources of Supply

The Contractor shall identify prospective U.S. suppliers of equipment and services for the Project in accordance with Clause I of Annex II of the Grant Agreement. The Contractor shall identify the potential value of U.S. exports of equipment and services and prepare a

list of U.S. suppliers that outlines prospective U.S. sources for procurement of goods and services related to Project implementation. The list shall include business name, point of contact, address, telephone and fax numbers, and a general description of products and services that may be procured.

Based on the selected optimal technical configuration of the Project, the Contractor shall also obtain preliminary cost estimates for the identified equipment and services from U.S. suppliers.

Interim Deliverable No. 4:

The Contractor shall prepare and submit to the Grantee an interim report detailing the findings from Task 4.

Task 5: Financial Analysis

The Contractor shall conduct a financial analysis that includes the following items:

Investment Costs

The Contractor shall prepare a budget estimate of the following investment costs, based on the preliminary conceptual design:

- Architectural and engineering design;
- Primary energy equipment (such as solar panels, charge controllers, inverters, and transformers);
- Auxiliary energy equipment;
- Transformers, switchgear, and other electro-technical equipment;
- Automated control and communication systems;
- Buildings and structures;
- Plot preparations;
- Connection to the national electricity grid;
- Permitting and licensing fees;
- Financing costs, including, but not limited to, interest during construction, bank and other creditors' fees and commissions, and currency conversion costs;
- Costs associated with developing certified emissions reduction ("CERs") under the CDM, including project validation; host country approval; registration with the CDM Executive Board; implementation and monitoring; and the verification, certification, issuance, and sale of CERs;
- Legal fees;
- Applicable value-added tax, excise tax, customs duties, and other obligatory payments;
- Inspections and special consultants;
- Insurance;
- Commissioning, startup, and spare parts;
- Environmental protection measurements;
- Personnel training, and
- Contingency reserve and other costs that may be identified by the Contractor.

### Operating Costs

The Contractor shall estimate the projected operating costs. The Contractor shall evaluate O&M costs for the Project, including the cost of energy for internal needs and maintenance costs, which include personnel, maintenance, and insurance costs. The Contractor shall provide and substantiate estimates of downtime during maintenance and shall clearly define maintenance procedures.

### Revenues

The Contractor shall model the financial performance of the Project as a function of tariff, including estimations of variability due to solar irradiance, cloud cover, and equipment performance.

### Cash Flow

The Contractor shall conduct a cash flow analysis to determine the best combination of energy system options. The primary assumptions for determining annual net cash flow are: (i) electricity selling prices; (ii) expected life of installed equipment; (iii) existing and new components of the electricity connection infrastructure; (iv) electricity transmission costs; (v) O&M costs; (vi) insurance; (vii) taxation structure; (viii) loan terms and conditions; (ix) depreciation method; and (x) operational cycle and annual hours of operation.

### Profitability Analysis

The Contractor shall generate and evaluate specific indices of economic performance such as profitability, return on investment, internal rate of return, debt service coverage ratio, and net present value. The Contractor shall design the financial analysis to evaluate available financing scenarios and shall analyze the cost effectiveness of each scenario.

### Interim Deliverable No. 5:

The Contractor shall prepare and submit to the Grantee an interim report detailing the findings from Task 5.

### Task 6: Risk Analysis

The Contractor shall perform a risk analysis to identify risks, minimize the identified risks where possible, and recommend a reasonable allocation of remaining risks. The primary risk categories to be considered by the Contractor shall include, but not be limited to, the following: (i) Project implementation risks, such as the risk of obtaining permits, licenses, and other agreements necessary for financial closure; (ii) technical risks, such as construction delays, cost overruns, higher-than-expected costs related to the upgrade of the existing electrical infrastructure, and lower-than-expected electricity production; and (iii) Project environment risks, such as risks that arise from the economic, market, regulatory, or legal factors governing the Project environment.

The Contractor shall recommend a number of enforceable risk mitigation mechanisms. The Contractor shall contact the Overseas Private Investment Corporation, Export-Import

Bank of the United States, Multilateral Investment Guarantee Agency, Multilateral Investment Fund, and international and local commercial banks.

Interim Deliverable No. 6:

The Contractor shall prepare and submit to the Grantee an interim report detailing the findings from Task 6.

Task 7: Regulatory Review

Subtask 7.1: Permits

The Contractor shall confirm that the Project conforms to the requirements of existing site permits, including land use, water use, waste disposal, highway access, security, wildlife preservation, noise limits, and other criteria as needed. The Contractor shall provide documentation, calculations, and examples to support the Grantee in submitting a filing for waivers, extensions, or new permits (as needed).

Subtask 7.2: Tariff Filing

The Contractor shall determine the necessary tariff to meet O&M costs, necessary reserves, working capital, taxes, recovery of development costs, debt service, and required return on equity. The Contractor shall include the calculation of the benchmark energy production and benchmark capacity of the Project, as well as verify that the solar generation measurement methodology meets relevant standards, electrical efficiency of equipment, and auxiliary load requirements.

The Contractor shall include a carbon credits model for internal rate of return calculations as a separate case, explaining the methodology used for such calculations.

The Contractor shall assist the Grantee in submitting a filing for a tariff for power by providing documentation and calculations. The Contractor shall provide the Grantee with the financial analysis developed in Task 5 as a component of the tariff calculation.

Interim Deliverable No. 7:

The Contractor shall prepare and submit to the Grantee an interim report detailing the findings from Task 7.

Task 8: Development Impact Assessment

For the benefit of those interested in the Project, the Contractor shall assess the development benefits associated with the Project and the methodology for measuring those benefits. The assessment shall include examples of the development benefits that would be expected in the Host Country if the Project is implemented as outlined in the Study. The Contractor shall focus on examples from the categories listed below and shall develop a methodology for assessing these impacts over time. The Contractor shall only list benefits in the categories that are applicable to the Project. The categories to be considered are as follows:

- Infrastructure: The Contractor shall estimate the expected scale of infrastructure development and improvements, such as a solar photovoltaic power plant and transmission and interconnection lines.
- Market-Oriented Reforms: The Contractor shall provide a description of any regulations, laws, or institutional changes that would facilitate Project implementation, more transparent regulatory systems, or increased competition.
- Human Capacity Building: The Contractor shall estimate the number and type of jobs that would be created if the Project is implemented. The Contractor shall comment on any prospective training recommended (the training needed after and as a result of the Project), including an estimate of the number of persons to be trained, type of training needed, and the desired outcome of the training.
- Technology Transfer and Productivity Enhancement: The Contractor shall provide a description of any efficiency gains or productivity benefits resulting from Project implementation, as well as the introduction of any new technologies.
- Other: The Contractor shall identify any other developmental benefits of the Project that are not captured in the four categories listed above, including any spin-off or demonstration effects such as enhanced economic growth, increased investment, or indirect job creation.

Interim Deliverable No. 8:

The Contractor shall prepare and submit to the Grantee an interim report detailing the findings from Task 8.

Task 9: Implementation Plan

The Contractor shall develop an implementation plan, including, but not limited to, schedules and timelines for all Project-related activities, contracts, agreements, staffing and training, regulatory consent, financing, and ownership and management decisions. The Contractor shall also prepare a draft power purchase and interconnection agreement, developed in accordance with relevant policies and requirements of the Grantee and offtakers. The Contractor shall prepare draft tender documents that the Grantee may use to initiate international competitive bidding in accordance with the Grantee's policies and the laws of El Salvador.

The Contractor's scope of responsibility ends with completion of the draft tender documents. If the Grantee requires further services for bid evaluation or subsequent design changes, the Grantee must negotiate separate payment for such services. The Contractor is not responsible for any work associated with publicizing the tender documents or evaluating proposals under any procurement-related activities for this Project.

Interim Deliverable No. 9:

The Contractor shall prepare and submit to the Grantee an interim report detailing the findings from Task 9.

Task 10: Financing Plan

The Contractor shall assist the Grantee in preparing a financing plan consistent with the Grantee's financial resources and borrowing capacity, showing probable sources of equity and debt, and confirming that the Project conforms to the standards and portfolio policies of major multilateral lenders and to the policies for use of funds from the Government of El Salvador and the Grantee. The financing plan shall include a proposed financial structure of the Project according to the policies and requirements of the likely financing parties, including the debt-to-equity ratio, debt coverage ratio requirements, recovery of development costs, covenants, term of loans, amortization methods, reserve requirements, closing costs, and other relevant parameters. The financial plan shall also include the financial analysis conducted in Task 5.

Interim Deliverable No. 10:

The Contractor shall prepare and submit to the Grantee an interim report detailing the findings from Task 10.

Task 11: Final Report

The Contractor shall prepare and deliver to the Grantee and USTDA a substantive and comprehensive final report of all work performed under these Terms of Reference ("Final Report"). The Final Report shall be organized according to the above tasks, and shall include all deliverables and documents that have been provided to the Grantee. The Final Report shall be prepared in accordance with Clause I of Annex II of the Grant Agreement. The Final Report shall be prepared in English and Spanish.

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.
- (4) The Grantee shall be responsible for all procurement-related final decisions.

## 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 the Comisión Ejecutiva Hidroeléctrica del Río Lempa ("CEL") ("Client"), dated \_\_\_\_\_ ("Grant Agreement"). The Client has selected \_\_\_\_\_ ("Contractor") to perform the feasibility study ("Study") for the CEL Solar Photovoltaic Power Pilot project ("Project") in El Salvador ("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.

**(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, and 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 December 31, 2012, 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.: 1111/121001  
Activity No.: 2011-51033A  
Reservation No.: 2011289  
Grant No.: GH201151289

**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  
(FROM USTDA GRANT AGREEMENT)**

## Annex I

### **Terms of Reference**

#### Objective

The objective of the feasibility study ("Study") for the CEL Solar Photovoltaic Power Pilot Project ("Project") in El Salvador is to determine the technical, economic, and financial viability of a 3 MW grid-connected solar photovoltaic power generation pilot project in El Salvador. The Study will allow the Comisión Ejecutiva Hidroeléctrica del Río Lempa ("CEL") ("Grantee") to compile solar resource data, assess solar photovoltaic technologies, conduct a preliminary conceptual design of the Project, and draft legal documents and agreements for Project implementation.

#### General Considerations for Deliverables and Documents

The U.S. firm selected by the Grantee to perform the Study ("Contractor") shall undertake a quality control review process, including a technical and editorial review, of all deliverables and documents submitted to the Grantee to ensure readability, accuracy, and consistency. The interim deliverables specified in these Terms of Reference shall serve to keep the Grantee informed about the Contractor's work on the Study and to ensure that the Contractor's findings are acceptable to the Grantee before critical decisions are made on the Study. The Contractor shall submit monthly progress reports to the Grantee. The Contractor shall submit all deliverables and documents to the Grantee in English and Spanish.

#### Activities

##### Task 1: Kick-Off Meeting and Inception Report

###### Subtask 1.1: Kick-Off Meeting

The Contractor shall meet with the Grantee to discuss the details of the technical approach and work plan, including reporting requirements, the methodology for completing the Terms of Reference, and the working relationships between personnel engaged in the Study. The Contractor shall also conduct site inspections, obtain copies of available information, and make arrangements for the collection of field data, as needed.

The Grantee shall provide temporary working and meeting facilities to the Contractor. The Grantee shall also provide or make available all existing documentation, drawings, diagrams, and specifications relevant to the Study and the proposed Project site(s). The Grantee shall provide available insolation data, geotechnical studies, topographic studies, road studies, and transmission load flow studies. The Grantee shall provide data from the demonstration solar array that the Grantee has installed. The Grantee shall also provide copies of current Salvadoran government guidelines and policies for tariffs and the licensing of solar power generating plants.

**Subtask 1.2: Inception Report**

Following the kick-off meeting, the Contractor shall prepare an inception report that includes a list of attendees, topics discussed, and any agreed-upon refinements in the technical approach and work plan. As part of the inception report, the Contractor shall perform a gap analysis based on the available information.

Interim Deliverable No. 1:

The Contractor shall prepare and submit to the Grantee an interim report detailing the findings from Task 1.

**Task 2: Technical Analysis**

**Subtask 2.1: Available Documentation**

The Contractor shall review available information and existing studies regarding the technical, economic, and environmental aspects of the Project. The Contractor shall review any solar resource assessments conducted by the Grantee.

**Subtask 2.2: Solar Resource and Site Assessments**

The Contractor shall compile the following solar resource data for the proposed Project site(s):

- Typical mean year data;
- Average daily and monthly solar insolation;
- Atmospheric pressure;
- Sun elevation angle;
- Estimates for direct normal irradiance (kWh/m<sup>2</sup>) and diffuse horizontal irradiance (kWh/m<sup>2</sup>);
- Dry-bulb temperature (°C);
- Wind speed (m/s); and
- Quantify data uncertainties.

The accuracy and completeness of the solar resource data shall be adequate to meet the standards and requirements of potential lenders and investors.

The Contractor is not required to install and monitor meteorological instruments to assess the solar resource. The Grantee shall provide or shall make available to the Contractor all previous solar resource assessment data for the proposed Project site(s). The Contractor shall verify that the Grantee's solar resource assessment data is consistent with the solar resource data on El Salvador that is available through global meteorological databases, such as those from the National Aeronautics and Space Administration, *meteonorm*, and the National Renewable Energy Laboratory.

**Subtask 2.3: Preliminary Comparative Analysis of Solar Photovoltaic Technologies**

The Contractor shall utilize geographical, climate, topographical, technical, and economic variables to analyze and recommend the optimal solar photovoltaic technology to be used at the proposed Project site(s).

The comparative analysis shall include solar photovoltaic, including monocrystalline silicon modules, polycrystalline silicon modules, amorphous silicon modules, thin-film modules, and solar concentrating photovoltaic technologies.

The Contractor shall use the data generated in Subtask 2.2 and shall estimate the following:

- Preliminary array per technology and available land to maximize energy production;
- Energy production estimates per technology on an annual and monthly basis;
- Average operation and maintenance ("O&M") costs per technology;
- Return on investment and net present value per technology, considering local energy prices;
- Recommend the optimal technology; and
- Recommend the optimal Project site or combination of sites.

#### Subtask 2.4: Technical Configuration and Preliminary Conceptual Design

The Contractor shall evaluate the technical, environmental, and economic aspects of the optimal solar photovoltaic technology to determine a feasible and appropriate preliminary conceptual design of the Project.

The Contractor shall analyze the following, depending on if the optimal technology is a solar photovoltaic array or a solar concentrating photovoltaic array:

- Provide the natural and minimum technical conditions under which the technical design has been done. Provide all parameters used for the design work to the Grantee.
- Determine the total solar photovoltaic or concentrating photovoltaic power system capacity that will be installed to adequately supply 3 MW. Provide calculations to show how it was done.
- Design and determine the size of the solar array, size of inverter string, cable sizes, and control and protection units. Provide all calculations.
- Provide the minimum specifications of the solar photovoltaic or concentrating photovoltaic power generation system components, including, but not limited to, solar modules, inverters, data logger, cables, and balance of system including the solar array mounting frame;
- Set out the general layout and arrangement of the solar photovoltaic or concentrating photovoltaic generation unit to provide safe and reliable operation.
- Identify and list all the tools and equipment that will be required to install and operate the solar photovoltaic or concentrating photovoltaic power generation unit.
- Develop a periodic maintenance plan.
- Assess and determine the skill requirements of the technicians that will operate the unit.

The Contractor shall also analyze additional Project components that may include, but are not limited to, the following:

- Racking system;
- Wiring for AC/DC systems;
- Security fencing;
- Metering equipment;
- Construction equipment;
- Temporary office buildings;
- Temporary storage facilities;
- Equipment access laneways on site property;
- Distribution lines to point of common coupling with the local distribution company; and
- Temporary laydown areas used for construction purposes.

Interim Deliverable No. 2:

The Contractor shall prepare and submit to the Grantee an interim report detailing the findings from Task 2.

Task 3: Preliminary Environmental Impact Assessment

The Contractor shall conduct a preliminary review of the Project's environmental impact and environmental compliance with reference to local requirements and those of multilateral development banks (such as the World Bank and Inter-American Development Bank). This review shall identify potential positive and negative impacts, discuss the extent to which negative impacts can be avoided or mitigated, and develop plans for a full environmental impact assessment in anticipation of the Project moving forward to the implementation stage. In particular, the Contractor shall identify any steps that the Grantee or other interested parties will need to undertake subsequent to the completion of the Study and prior to Project implementation.

The Contractor's assessment shall also include the following:

- Environmental description of the proposed Project site(s), in terms of the current physical, biological, socioeconomic, and landscape conditions;
- Calculation of the reduction of carbon dioxide emissions after Project implementation to support registration under the Clean Development Mechanism ("CDM").

Interim Deliverable No. 3:

The Contractor shall prepare and submit to the Grantee an interim report detailing the findings from Task 3.

Task 4: U.S. Sources of Supply

The Contractor shall identify prospective U.S. suppliers of equipment and services for the Project in accordance with Clause I of Annex II of the Grant Agreement. The Contractor shall identify the potential value of U.S. exports of equipment and services and prepare a

list of U.S. suppliers that outlines prospective U.S. sources for procurement of goods and services related to Project implementation. The list shall include business name, point of contact, address, telephone and fax numbers, and a general description of products and services that may be procured.

Based on the selected optimal technical configuration of the Project, the Contractor shall also obtain preliminary cost estimates for the identified equipment and services from U.S. suppliers.

Interim Deliverable No. 4:

The Contractor shall prepare and submit to the Grantee an interim report detailing the findings from Task 4.

Task 5: Financial Analysis

The Contractor shall conduct a financial analysis that includes the following items:

Investment Costs

The Contractor shall prepare a budget estimate of the following investment costs, based on the preliminary conceptual design:

- Architectural and engineering design;
- Primary energy equipment (such as solar panels, charge controllers, inverters, and transformers);
- Auxiliary energy equipment;
- Transformers, switchgear, and other electro-technical equipment;
- Automated control and communication systems;
- Buildings and structures;
- Plot preparations;
- Connection to the national electricity grid;
- Permitting and licensing fees;
- Financing costs, including, but not limited to, interest during construction, bank and other creditors' fees and commissions, and currency conversion costs;
- Costs associated with developing certified emissions reduction ("CERs") under the CDM, including project validation; host country approval; registration with the CDM Executive Board; implementation and monitoring; and the verification, certification, issuance, and sale of CERs;
- Legal fees;
- Applicable value-added tax, excise tax, customs duties, and other obligatory payments;
- Inspections and special consultants;
- Insurance;
- Commissioning, startup, and spare parts;
- Environmental protection measurements;
- Personnel training, and
- Contingency reserve and other costs that may be identified by the Contractor.

### Operating Costs

The Contractor shall estimate the projected operating costs. The Contractor shall evaluate O&M costs for the Project, including the cost of energy for internal needs and maintenance costs, which include personnel, maintenance, and insurance costs. The Contractor shall provide and substantiate estimates of downtime during maintenance and shall clearly define maintenance procedures.

### Revenues

The Contractor shall model the financial performance of the Project as a function of tariff, including estimations of variability due to solar irradiance, cloud cover, and equipment performance.

### Cash Flow

The Contractor shall conduct a cash flow analysis to determine the best combination of energy system options. The primary assumptions for determining annual net cash flow are: (i) electricity selling prices; (ii) expected life of installed equipment; (iii) existing and new components of the electricity connection infrastructure; (iv) electricity transmission costs; (v) O&M costs; (vi) insurance; (vii) taxation structure; (viii) loan terms and conditions; (ix) depreciation method; and (x) operational cycle and annual hours of operation.

### Profitability Analysis

The Contractor shall generate and evaluate specific indices of economic performance such as profitability, return on investment, internal rate of return, debt service coverage ratio, and net present value. The Contractor shall design the financial analysis to evaluate available financing scenarios and shall analyze the cost effectiveness of each scenario.

### Interim Deliverable No. 5:

The Contractor shall prepare and submit to the Grantee an interim report detailing the findings from Task 5.

### Task 6: Risk Analysis

The Contractor shall perform a risk analysis to identify risks, minimize the identified risks where possible, and recommend a reasonable allocation of remaining risks. The primary risk categories to be considered by the Contractor shall include, but not be limited to, the following: (i) Project implementation risks, such as the risk of obtaining permits, licenses, and other agreements necessary for financial closure; (ii) technical risks, such as construction delays, cost overruns, higher-than-expected costs related to the upgrade of the existing electrical infrastructure, and lower-than-expected electricity production; and (iii) Project environment risks, such as risks that arise from the economic, market, regulatory, or legal factors governing the Project environment.

The Contractor shall recommend a number of enforceable risk mitigation mechanisms. The Contractor shall contact the Overseas Private Investment Corporation, Export-Import

Bank of the United States, Multilateral Investment Guarantee Agency, Multilateral Investment Fund, and international and local commercial banks.

Interim Deliverable No. 6:

The Contractor shall prepare and submit to the Grantee an interim report detailing the findings from Task 6.

Task 7: Regulatory Review

Subtask 7.1: Permits

The Contractor shall confirm that the Project conforms to the requirements of existing site permits, including land use, water use, waste disposal, highway access, security, wildlife preservation, noise limits, and other criteria as needed. The Contractor shall provide documentation, calculations, and examples to support the Grantee in submitting a filing for waivers, extensions, or new permits (as needed).

Subtask 7.2: Tariff Filing

The Contractor shall determine the necessary tariff to meet O&M costs, necessary reserves, working capital, taxes, recovery of development costs, debt service, and required return on equity. The Contractor shall include the calculation of the benchmark energy production and benchmark capacity of the Project, as well as verify that the solar generation measurement methodology meets relevant standards, electrical efficiency of equipment, and auxiliary load requirements.

The Contractor shall include a carbon credits model for internal rate of return calculations as a separate case, explaining the methodology used for such calculations.

The Contractor shall assist the Grantee in submitting a filing for a tariff for power by providing documentation and calculations. The Contractor shall provide the Grantee with the financial analysis developed in Task 5 as a component of the tariff calculation.

Interim Deliverable No. 7:

The Contractor shall prepare and submit to the Grantee an interim report detailing the findings from Task 7.

Task 8: Development Impact Assessment

For the benefit of those interested in the Project, the Contractor shall assess the development benefits associated with the Project and the methodology for measuring those benefits. The assessment shall include examples of the development benefits that would be expected in the Host Country if the Project is implemented as outlined in the Study. The Contractor shall focus on examples from the categories listed below and shall develop a methodology for assessing these impacts over time. The Contractor shall only list benefits in the categories that are applicable to the Project. The categories to be considered are as follows:

- Infrastructure: The Contractor shall estimate the expected scale of infrastructure development and improvements, such as a solar photovoltaic power plant and transmission and interconnection lines.
- Market-Oriented Reforms: The Contractor shall provide a description of any regulations, laws, or institutional changes that would facilitate Project implementation, more transparent regulatory systems, or increased competition.
- Human Capacity Building: The Contractor shall estimate the number and type of jobs that would be created if the Project is implemented. The Contractor shall comment on any prospective training recommended (the training needed after and as a result of the Project), including an estimate of the number of persons to be trained, type of training needed, and the desired outcome of the training.
- Technology Transfer and Productivity Enhancement: The Contractor shall provide a description of any efficiency gains or productivity benefits resulting from Project implementation, as well as the introduction of any new technologies.
- Other: The Contractor shall identify any other developmental benefits of the Project that are not captured in the four categories listed above, including any spin-off or demonstration effects such as enhanced economic growth, increased investment, or indirect job creation.

Interim Deliverable No. 8:

The Contractor shall prepare and submit to the Grantee an interim report detailing the findings from Task 8.

Task 9: Implementation Plan

The Contractor shall develop an implementation plan, including, but not limited to, schedules and timelines for all Project-related activities, contracts, agreements, staffing and training, regulatory consent, financing, and ownership and management decisions. The Contractor shall also prepare a draft power purchase and interconnection agreement, developed in accordance with relevant policies and requirements of the Grantee and off-takers. The Contractor shall prepare draft tender documents that the Grantee may use to initiate international competitive bidding in accordance with the Grantee's policies and the laws of El Salvador.

The Contractor's scope of responsibility ends with completion of the draft tender documents. If the Grantee requires further services for bid evaluation or subsequent design changes, the Grantee must negotiate separate payment for such services. The Contractor is not responsible for any work associated with publicizing the tender documents or evaluating proposals under any procurement-related activities for this Project.

Interim Deliverable No. 9:

The Contractor shall prepare and submit to the Grantee an interim report detailing the findings from Task 9.

Task 10: Financing Plan

The Contractor shall assist the Grantee in preparing a financing plan consistent with the Grantee's financial resources and borrowing capacity, showing probable sources of equity and debt, and confirming that the Project conforms to the standards and portfolio policies of major multilateral lenders and to the policies for use of funds from the Government of El Salvador and the Grantee. The financing plan shall include a proposed financial structure of the Project according to the policies and requirements of the likely financing parties, including the debt-to-equity ratio, debt coverage ratio requirements, recovery of development costs, covenants, term of loans, amortization methods, reserve requirements, closing costs, and other relevant parameters. The financial plan shall also include the financial analysis conducted in Task 5.

Interim Deliverable No. 10:

The Contractor shall prepare and submit to the Grantee an interim report detailing the findings from Task 10.

Task 11: Final Report

The Contractor shall prepare and deliver to the Grantee and USTDA a substantive and comprehensive final report of all work performed under these Terms of Reference ("Final Report"). The Final Report shall be organized according to the above tasks, and shall include all deliverables and documents that have been provided to the Grantee. The Final Report shall be prepared in accordance with Clause I of Annex II of the Grant Agreement. The Final Report shall be prepared in English and Spanish.

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.
- (4) The Grantee shall be responsible for all procurement-related final decisions.

**ANNEX 6**

**COMPANY INFORMATION**



**B. Offeror's Authorized Negotiator**

Provide 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.

**C. Negotiation Prerequisites**

1. Discuss any current or anticipated commitments which may impact the ability of the Offeror or its subcontractors to complete the Feasibility Study as proposed and reflect such impact within the project schedule.
2. Identify any specific information which is needed from the Grantee before commencing contract negotiations.

**D. Offeror's Representations**

Please provide exceptions and/or explanations in the event that any of the following representations cannot be made:

1. Offeror is a corporation [*insert applicable type of entity if not a corporation*] duly organized, validly existing and in good standing under the laws of the State of \_\_\_\_\_. The Offeror 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 Feasibility Study. The Offeror 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. The Offeror has included, with this proposal, a certified copy of its Articles of Incorporation, and a certificate of good standing issued within one month of the date of its proposal by the State of \_\_\_\_\_.
2. Neither the Offeror nor any of its principal officers have, within the three-year period preceding this RFP, 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 Offeror, 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 Offeror. The Offeror, 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 Offeror 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 Offeror has not had filed against it an involuntary petition under any bankruptcy, insolvency or similar law.

The selected Offeror shall notify the Grantee and USTDA if any of the representations included in its proposal are no longer true and correct at the time of its entry into a contract with the Grantee. USTDA retains the right to request an updated certificate of good standing from the selected Offeror.

Signed: \_\_\_\_\_  
(Authorized Representative)

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**E. Subcontractor Profile**

1. Name of firm and business address (street address only), including telephone and fax numbers.
  
  
  
  
  
  
  
  
  
  
2. Year established (include predecessor companies and year(s) established, if appropriate).

**F. Subcontractor's Representations**

If any of the following representations cannot be made, or if there are exceptions, the subcontractor must provide an explanation.

1. Subcontractor is a corporation [*insert applicable type of entity if not a corporation*] duly organized, validly existing and in good standing under the laws of the State 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 Offeror is selected, to execute and deliver a subcontract to the Offeror for the performance of the Feasibility Study and to perform the Feasibility Study. 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 three-year period preceding this RFP, 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.

The selected subcontractor shall notify the Offeror, Grantee and USTDA if any of the representations included in this proposal are no longer true and correct at the time of the Offeror's entry into a contract with the Grantee.

Signed: \_\_\_\_\_  
(Authorized Representative)

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_