

**REQUEST FOR PROPOSALS**

**FEASIBILITY STUDY FOR THE**

**TURKEY: İSTAÇ WASTE-TO-ENERGY PLANT**

Submission Deadline: **4:00 PM**  
**LOCAL TIME**  
**November 1, 2010**

Submission Place:

**İSTAÇ A.Ş. ISTANBUL ENVIRONMENTAL  
MANAGEMENT INDUSTRY AND TRADING COMPANY  
PAŞA MAH. PIYALEPAŞA BULVARI NO: 74  
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**SEALED PROPOSALS SHALL BE CLEARLY MARKED AND RECEIVED PRIOR TO THE  
TIME AND DATE SPECIFIED ABOVE. PROPOSALS RECEIVED AFTER SAID TIME  
AND DATE WILL NOT BE ACCEPTED OR CONSIDERED.**

## REQUEST FOR PROPOSALS

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## **Section 1: INTRODUCTION**

The U.S. Trade and Development Agency (USTDA) has provided a grant in the amount of US \$491,160 to İSTAÇ A.Ş. Istanbul Environmental Management Industry and Trading Company (İSTAÇ) (the "Grantee") in accordance with a grant agreement dated August 24, 2010 (the "Grant Agreement") to analyze a waste-to-energy facility (Project) for İSTAÇ, the municipal waste processing and management company for the Greater Istanbul Municipality in Turkey (Host Country). The study will examine the proposed waste-to-energy facility in Istanbul to help Turkey meet municipal solid waste incineration targets set forth by the European Union, as well as provide a much-needed renewable energy source. 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**

In the aftermath of the 1993 methane explosion and ensuing fatal fire at an open MSW dump site in Istanbul, the Greater Istanbul Municipality created and commissioned two sanitary landfill sites, the Kömürcüoda Landfill on the Asian side of Istanbul and the Odayeri Landfill on the European side of the city. İSTAÇ was established in 1994 to manage the sanitary handling, storage, separation, recycling, and disposal of the city's municipal waste. On a daily basis, İSTAÇ handles and processes approximately 14,000 tons of MSW generated by Istanbul's 13 million residents. Presently, the city of Istanbul is incurring significant costs for the disposal of MSW in its two large landfills. These landfills are now considered "mature," requiring new solutions to the city's municipal waste problem.

With a dumping rate of 9,000 tons/day, the Odayeri Landfill is about 3 years away from reaching its capacity, prompting urgent planning for a solution, such as creating new landfill sites and/or implementing a sizeable WTE facility. Pursuant to the "European Community Compliance Scenarios A and B," İSTAÇ is already contemplating an incineration option to reduce MSW, and is looking to align this task with Turkey's need for renewable energy sources to improve its energy security situation. The current Renewable Energy Law in Turkey already incentivizes biomass projects, and this law is in the process of being amended to cover WTE projects as well.

The proposed study would analyze a 3,000 tons/day MSW-to-energy plant that would be implemented to provide a lasting solution to İSTAÇ's space limitation at the Odayeri Landfill site. Such a WTE plant would have a 70 MW generation capacity, enough to provide power to 350,000 households in the area. By properly incinerating 3,000 tons of solid waste per day, one-third of the municipal waste received at the Odayeri Landfill site, the prospective project would extend the remaining life of the landfill, reduce methane and odor emissions from the landfill site, and help İSTAÇ meet the MSW incineration targets set forth by the "European Union Compliance Scenario B."

İSTAÇ has a proven record of implementing landfill gas-to-energy projects, and is currently operating two power generation facilities that are fueled by biogas from İSTAÇ's landfills. The

total capacity of these two facilities is 40MW. Although İSTAÇ therefore has experience operating power generation facilities, the proposed 70 MW WTE facility would be İSTAÇ's first power generation facility fueled by solid waste, and it would be the first solid waste WTE facility in Turkey.

A background Desk Study/Definitional Mission Turkey: Solid Waste Management/Waste to Energy is provided for reference in Annex 2.

## 1.2 OBJECTIVE

The objective of this study is to analyze the technical, economic, and financial feasibility of a waste-to-energy facility for İSTAÇ, the municipal waste processing and management company for the Greater Istanbul Municipality, to help Turkey meet municipal solid waste incineration targets set forth by the European Union, as well as provide a much-needed renewable energy source.

## 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 \$491,160. **The USTDA grant of US \$491,160 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 \$491,160 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 İSTAÇ Waste-to-Energy Plant 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 Turkey: Solid Waste Management/Waste to Energy 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.

## **2.4 EXAMINATION OF DOCUMENTS**

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

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

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

## **2.5 PROJECT FUNDING SOURCE**

The Feasibility Study will be funded under a grant from USTDA. The total amount of the grant is not to exceed US \$491,160.

## **2.6 RESPONSIBILITY FOR COSTS**

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

## **2.7 TAXES**

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

## **2.8 CONFIDENTIALITY**

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

## **2.9 ECONOMY OF PROPOSALS**

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

## **2.10 OFFEROR CERTIFICATIONS**

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

## **2.11 CONDITIONS REQUIRED FOR PARTICIPATION**

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

## **2.12 LANGUAGE OF PROPOSAL**

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

## **2.13 PROPOSAL SUBMISSION REQUIREMENTS**

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

Vahit BALAHORLI  
İSTAÇ A.Ş Istanbul Environmental Management Industry and Trading Company  
Paşa Mah. Piyalepaşa Bulvarı No: 74  
34379 Şişli  
İSTANBUL, Turkey

Phone: +90-212-230-6041 ext.1710

**An Original and three (3) copies of your proposal must be received at the above address no later than 4PM, on November 1, 2010.**

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

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

#### **2.14 PACKAGING**

The original and each copy of the proposal must be sealed to ensure confidentiality of the information. The proposals should be individually wrapped and sealed, and labeled for content including "original" or "copy number x"; the original and three (3) copies 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 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, 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 USDA 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 \$491,160, which is a fixed amount.

Offerors shall submit one (1) original and three (3) copies of the proposal. Proposals received by fax cannot be accepted.

Each proposal must include the following:

- Transmittal Letter,
- Cover/Title Page,
- Table of Contents,
- Executive Summary,
- 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 5 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.

### **3.3 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 SECTION 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:

**Professional Experience (40%)** - Bidders shall propose a project team that will be fully qualified to execute the entire scope of the Feasibility Study. The proposed staff should have qualifications and experience in project management, multi-disciplines of engineering including mechanical, electrical, environmental, civil, structural and I&C, cost estimating and scheduling, economic analysis and project funding, design and drafting. Experience in the 50-200 MW range with solid fuel or biomass with utility or independent power producers is the main requirement. Since WTE Plants are not very common, Bidders may retain outside WTE and biomass consultants to supplement their engineering team. The qualified bidder will be expected to provide evidence of satisfactorily executing at least six (6) similar projects within the past 10 years either as the Plant Designer or the Owner's Engineer.

**Proposed Work Plan (35%)** - Bidders shall demonstrate good understanding of all the TOR tasks. Their approach to tackle the tasks should be in agreement with the generally accepted engineering methods used in the energy and power sector. The work plan should be detailed and responsive to the requirements presented in the TOR and should prove value-added in the EPC Phase of the Project.

**International + Host Country Experience (15% + 10%)** - Bidders are encouraged to list their international power project and/or FS experience. The ideal Bidder will have successfully completed at least (2) two similar or larger size power projects by the time of bid evaluations, preferably one of them being in Turkey.

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

Price will not be a factor in contractor selection.

**ANNEX 1**

Mr. Vahit BALAHORLI, İSTAÇ A.Ş Istanbul Environmental Management Industry and Trading Company, Paşa Mah. Piyalepaşa Bulvarı No: 74 34379 Şişli/ İSTANBUL, Turkey

## B -İSTAÇ WASTE-TO-ENERGY PLANT FEASIBILITY STUDY

POC: Nina Patel, USTDA, 1000 Wilson Boulevard, Suite 1600, Arlington, VA 22209-3901, Tel: (703) 875-4357, Fax: (703) 875-4009. İSTAÇ WASTE-TO-ENERGY PLANT FEASIBILITY STUDY. The Grantee invites submission of qualifications and proposal data (collectively referred to as the "Proposal") from interested U.S. firms that are qualified on the basis of experience and capability to develop a feasibility study for a waste-to-energy facility.

In the aftermath of the 1993 methane explosion and ensuing fatal fire at an open MSW dump site in Istanbul, the Greater Istanbul Municipality created and commissioned two sanitary landfill sites, the Kömürcüoda Landfill on the Asian side of Istanbul and the Odayeri Landfill on the European side of the city. İSTAÇ was established in 1994 to manage the sanitary handling, storage, separation, recycling, and disposal of the city's municipal waste. On a daily basis, İSTAÇ handles and processes approximately 14,000 tons of MSW generated by Istanbul's 13 million residents. Presently, the city of Istanbul is incurring significant costs for the disposal of MSW in its two large landfills. These landfills are now considered "mature," requiring new solutions to the city's municipal waste problem.

With a dumping rate of 9,000 tons/day, the Odayeri Landfill is about 3 years away from reaching its capacity, prompting urgent planning for a solution, such as creating new landfill sites and/or implementing a sizeable WTE facility. Pursuant to the "European Community Compliance Scenarios A and B," İSTAÇ is already contemplating an incineration option to reduce MSW, and is looking to align this task with Turkey's need for renewable energy sources to improve its energy security situation. The current Renewable Energy Law in Turkey already incentivizes biomass projects, and this law is in the process of being amended to cover WTE projects as well.

The proposed study would analyze a 3,000 tons/day MSW-to-energy plant that would be implemented to provide a lasting solution to İSTAÇ's space limitation at the Odayeri Landfill site. Such a WTE plant would have a 70 MW generation capacity, enough to provide power to 350,000 households in the area. By properly incinerating 3,000 tons of solid waste per day, one-third of the municipal waste received at the Odayeri Landfill site, the prospective project would extend the remaining life of the landfill, reduce methane and odor emissions from the landfill site, and help İSTAÇ meet the MSW incineration targets set forth by the "European Union Compliance Scenario B."

İSTAÇ has a proven record of implementing landfill gas-to-energy projects, and is currently operating two power generation facilities that are fueled by biogas from İSTAÇ's landfills. The total capacity of these two facilities is 40MW. Although İSTAÇ therefore has experience operating power generation facilities, the proposed 70 MW

WTE facility would be İSTAC'ın first power generation facility fueled by solid waste, and it would be the first solid waste WTE facility in Turkey.

The U.S. firm selected will be paid in U.S. dollars from a \$491,160 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/desk study report are available from USTDA, at 1000 Wilson Boulevard, Suite 1600, Arlington, VA 22209-3901. To request the RFP in PDF format, please go to:

<https://www.ustda.gov/businessopps/rfpform.asp>. Requests for a mailed hardcopy version of the RFP may also be faxed to the IRC, USTDA at 703-875-4009. In the fax, please include your firm's name, contact person, address, and telephone number. Some firms have found that RFP materials sent by U.S. mail do not reach them in time for preparation of an adequate response. Firms that want USTDA to use an overnight delivery service should include the name of the delivery service and your firm's account number in the request for the RFP. Firms that want to send a courier to USTDA to retrieve the RFP should allow one hour after faxing the request to USTDA before scheduling a pick-up. Please note that no telephone requests for the RFP will be honored. Please check your internal fax verification receipt. Because of the large number of RFP requests, USTDA cannot respond to requests for fax verification. Requests for RFPs received before 4:00 PM will be mailed the same day. Requests received after 4:00 PM will be mailed the following day. Please check with your courier and/or mail room before calling USTDA.

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

Interested U.S. firms should submit their Proposal in English directly to the Grantee by 4PM, October 18, 2010 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**

**DEFINITIONAL MISSION:  
TURKEY: SOLID WASTE MANAGEMENT/WASTE to ENERGY  
DM-CO2010810006**

**FINAL REPORT**

Prepared by  
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## **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.**

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## 1. Executive Summary

This project has been identified by İSTAÇ, the municipal waste processing and management company of the Greater Istanbul Municipality in Turkey. On a daily basis, İSTAÇ handles and processes about 14,000 tons of municipal solid waste (MSW) generated by Istanbul's 13 million residents living in 39 suburban municipalities. In the aftermath of the 1993 methane explosion and an ensuing fatal fire at an open MSW dump site, The Greater Istanbul Municipality created and commissioned two sanitary landfill sites, viz., the Kömürçüoda Landfill on the Asian side and the Odayeri Landfill on the European side of the city. As of 2010, the remaining life of the Odayeri landfill is estimated to be about 3 years, prompting urgent planning for a solution such as creating new landfill sites and/or implementing a sizeable Solid Waste-to-Energy (WTE) Facility.

İSTAÇ is no stranger to the Waste-to-Energy concept as an 18 MW Build, Own, Operate and Transfer (BOOT) landfill gas-to-power facility has already been implemented at their landfill sites. This facility provides substantial methane mitigation, at the same time generating power for about 90,000 households. This facility however, does not help with volumetric reduction of the municipal solid waste. Currently among the most critical items on İSTAÇ's docket are the management of MSW per European Union directives and extending the remaining life of the existing landfill sites. This definitional mission was conducted to determine the needs of the İSTAÇ in more detail and investigate the feasibility of a sizeable Solid Waste-to-Energy (WTE) plant.

During the site visit Contractor determined that about 3,000 metric tons of the MSW is suitable to be WTE fuel. By properly incinerating 3,000 metric tons of solid waste, which is about one third of the municipal waste received at the Odayeri landfill site, the prospective project would;

- 1) Extend the remaining life of the landfill,
- 2) Mitigate formation of leachate and waste sludge and reduce the renegade methane and odor emissions from the landfill site,
- 3) Generate electricity to power about 350,000 households, and
- 4) Help İSTAÇ meet the MSW incineration targets set forth by the "European Union Compliance Scenario B"

Modern WTE plants operating under optimum burn parameters and with their state-of-the-art environmental controls pose no adverse environmental effects and do comply with the World Bank and EU Emissions Standards. Based on the initial discussions with the World Bank's IFC, with the Turkish Industrial Development Bank (TSKB) and with the European Bank for Reconstruction and Development (EBRD), this project is likely to be supported with a syndicated loan under their respective Renewable Energy Programs. The turn-key EPC project cost for the proposed WTE facility is estimated to be around US\$ 314 Million with the potential U.S. exports being in the \$ 55 Million \$ 105 Million range. A number of U.S. firms which have a proven track record in similar energy/power projects have already indicated interest in providing equipment and engineering services for the project.

The Project Feasibility Study (FS) defined in the Terms of Reference Section constitutes the next step towards the technical and financial feasibility of the greenfield WTE plant. The qualifications required of the candidate U.S. companies to undertake the Feasibility Study, the estimated project budget and project schedule are provided. The budget for the Feasibility Study was estimated at \$491,160.

## 2. Definitional Mission Scope and Approach

Acting on İSTAÇ's request for know-how for the better management and the better utilization of municipal waste, USTDA allocated funding for an on-site assessment of the viability of several MSW projects in Istanbul, Turkey. For this purpose EnerconAmerica, Inc., (Contractor) a Chicago based engineering consulting firm which specializes in international energy and power projects was contracted to conduct a Definitional Mission for the USTDA.

Contractor travelled to Istanbul in April of 2010 for a ten day reconnaissance mission. Sequentially, he met with the İSTAÇ Officials, the loan officers at the International Finance Corporation (IFC), the Turkish Industrial Development Bank (TSKB) and the European Bank for Reconstruction and Development (EBRD) to conduct expert analyses in project technical feasibility and project financeability. Similarly, to gauge the interest of large Turkish Construction Firms, Contractor held meetings with the executives of ENKA Construction (Bechtel's Turkish Partner) and Doguş Holding (GE Finance's Turkish Partner).

During the meetings with İSTAÇ the following details were discussed;

- a) The current MSW collection and handling methods,
- b) Separation of the wet organics, metals, glass, paper and plastics prior to landfilling and the physical and thermal characteristics of each separated batch,
- c) Physical characteristics of the landfills; annual dumping rates, tarp lining, leachate collection and treatment, landfill gas collection and utilization,
- d) İSTAÇ's credit worthiness.

During the meetings with the IFC, the TSKB and the EBRD, Contractor presented the preliminary findings to the Bank(s) and discussed the potential risks and benefits of the candidate projects and the likelihood of financing.

Upon his return to the States, Contractor analyzed all the information and data collected. More specifically, the expansion of the existing landfill gas-to-power facility is evaluated. Similarly, based on the amount and composition of the MSW the most suitable boiler type and size was determined. All BOP (Balance of Plant) equipment such as high pressure steam piping, steam turbine, condenser, by-pass system, reverse osmosis system, feedwater and condensate pumps, transformer, switchgear, plant control system were sized and an indicative cost estimate was prepared for the proposed WTE plant. U.S. equipment manufacturers were contacted to gauge their interest in the project and to determine the U.S. export potential. Consequently NPV and pay-back analyses were conducted as a measure of project viability.

In parallel course, Contractor contacted the Chicago Branch of the U.S. Exim Bank to investigate the possibility of funding from that source.

Since İSTAÇ does not have a U.S. based partner or sponsor, the prospective project would not qualify for OPIC funding and therefore this source was not investigated.

Recommendations to fund (or defer funding of) further feasibility studies for the identified projects are provided herein, along with a project budget, schedule and Terms of Reference (TOR) outlining required sequence of tasks.

EnerconAmerica's recommendations are based on the following specific criteria:

- a) For a project to be deemed as viable it must meet national development priorities for the host country,
- b) It must offer significant U.S. export potential for equipment and services,
- c) It must be likely to be financed, and
- d) The project sponsor must allow U.S. companies without any prejudice to compete for contracts during project implementation.

### **3. Project Background and Description**

#### **3.1 Country Profile**

**Turkey** is a Eurasian country that stretches across the Anatolian peninsula in Western Asia and Thrace in the Balkan region of southeastern Europe spanning about 779, 542 square kilometers of land. It is bordered by eight countries: Bulgaria to the northwest; Greece to the west; Georgia to the northeast; Armenia, Azerbaijan and Iran to the east; and Iraq and Syria to the southeast. The natural borders are the Mediterranean Sea to the south; the Aegean Sea to the west; and the Black Sea is to the north. Current population of Turkey is 74.8 million with about 1% growth rate per annum. It is a democratic, secular, unitary, constitutional republic, with an ancient and historical cultural heritage stemming from the early civilizations of Anatolia and the Ottoman Empire. Its current day republican system was established in 1923, following the fall of the Ottoman Empire in the aftermath of World War I. Since then, Turkey has become increasingly integrated with the West through membership in organizations such as the Council of Europe, NATO, OECD, WEOG, OSCE and the G-20 major economies.

Turkey began full membership negotiations with the European Union in 2005, having been an associate member of the European Economic Community since 1963 and having reached a customs union agreement in 1995. Turkey is classified as a developed country by the CIA and as a regional power by political scientists and economists worldwide.

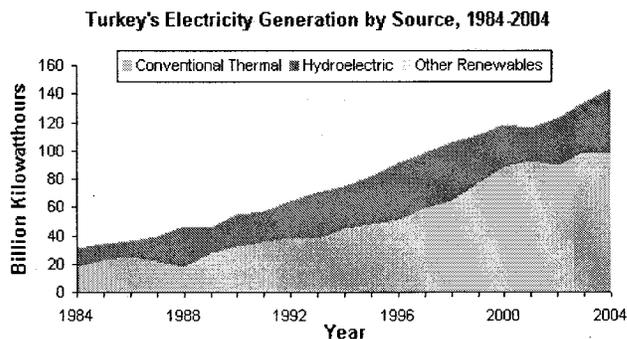
Turkey's dynamic economy is a complex mix of modern industry and commerce along with a traditional agriculture sector that still accounts for about 25% of employment. It has a strong and rapidly growing private sector, and while the state remains a major participant in basic industry, banking, transport, and communications, this role has been diminishing as Turkey's privatization program continues. The largest industrial sector is textiles and clothing, which accounts for one-third of industrial employment; it faces stiff competition in international markets with the end of the global quota system. However, other sectors, notably the automotive and electronics industries, are rising in importance and have surpassed textiles within Turkey's export mix. Real

GDP growth has exceeded 6% in many years, but this strong expansion has been interrupted by sharp declines in output in 1994, 1999, and 2001.

**Istanbul** is the largest city in Turkey and fourth largest city proper (i.e. including the islands) in the world with a population of nearly 13 million. Istanbul is also a megacity, as well as the cultural, economic, and financial center of Turkey and the Balkan nations. The city covers 39 districts (i.e., suburban municipalities) of the Istanbul province. It is located on the Bosphorus Strait and encompasses the natural harbor known as the Golden Horn. It extends both on the European (Thrace) and on the Asian (Anatolia) sides of the Bosphorus, and is thereby the only metropolis in the world that is situated on two continents.

### 3.2 Energy and Power Sector\*

In 2008, Turkey had a total installed electricity generating capacity of about 42 GigaWatts (GW). The country produced 189.4 billion kiloWatt-hours (BkWh) of electricity, while consuming 198.1 BkWh. This corresponds to about 2,278 kWh power consumption per capita. Since mid- 1980's conventional thermal sources have comprised the largest share of Turkey's electricity supply, contributing 65-75 percent depending on the decade. Hydropower makes up almost all of the remainder. Demand for electricity has been growing by about 9% each year, requiring constant investment into the power and energy sector. Although Turkey does not currently produce any nuclear energy, it has been aggressively planning for nuclear power to account for ten per cent of generation by 2020, primarily to reduce Turkey's dependence on imported oil and gas and avert looming power shortages.



Source: EIA International Energy Annual

Natural gas	51.4%
Lignite	21.6%
Water	12.2%
Imported coal	6.8%
Fuel oil	4.7%
Stone coal	1.6%
Wind	0.5%
Diesel fuel	0.4%
Geothermal	0.0%
Other	0.7%

**Conventional Thermal:** Conventional thermal sources have historically been Turkey's largest power source. Natural gas-fired power plants have increased substantially in the last decade and now comprise more than half of the country's conventional thermal generation.

\*Sources: Turkish Ministry of Energy and Natural Resources; CIA World Fact Book; EIA International Energy

Coal-fired power stations also remain an important energy source for Turkey, and there is renewed interest in exploiting Turkey's domestic coal resources following large natural gas price increases. In 2006, tenders were offered by the Turkish Government for the construction of two new 1,200-MW coal-fired units at the existing Afsin-Elbistan power plant. The Afsin-Elbistan region holds 3.3 billion short tons of lignite reserves, or 40 percent of Turkey's domestic total.

Over the last few years, several new conventional thermal power plants have come online. Currently, tenders for two large gas turbine combined cycle plants, 770 MW each, and for an 800 MW coal fired plant have been issued by private power companies in Turkey.

**Hydroelectric:** Turkey has significant hydroelectric power resources, with more than 100 total plants and total installed hydroelectric generating capacity of 12.6 GW. Turkey is still developing hydropower plants, especially as part of the \$32-billion Southeastern Anatolia Project (GAP) along the basin of the Tigris and Euphrates Rivers. Under the GAP project, which is considered one of the most ambitious water development projects ever undertaken, Turkey will erect 22 dams, 19 hydroelectric power stations (with around 7.5 GW of generating capacity), and an expansive network of tunnels and irrigation canals covering 1.7 million hectares of land.. The entire GAP project is scheduled to be completed by 2011, adding substantially to the share of hydroelectricity in Turkey's energy portfolio.

**Nuclear:** In 2006, Turkey's Atomic Energy Agency (TAEK) announced that the Black Sea port of Sinop would be the site of the country's first nuclear power plant. The site was one of eight identified by TAEK as a potential location for the power plant following a careful technical evaluation. In March of 2010, a protocol agreement with South Korea's KEPCO has been signed for KEPCO to conduct feasibility studies and produce a bid to build a 5600 MW plant with four reactors. Previously, Turkey had tried to move ahead with plans to build a nuclear power plant in the Mediterranean city of Mersin for more than 30 years, but the plans have been blocked by difficulties stemming from insufficient financing, legal issues, and opposition from environmental and anti-nuclear groups. A new agreement with Russia's Atomstroyexport has been signed in May 2010 to revive the Mersin Nuclear Plant Project.

**Other Renewables:** Other renewable sources add very little to Turkey's total electricity supply, contributing a mere one half of one percent to electricity generation. Turkey has very limited oil and gas reserves and is therefore looking at renewable energy as a means to improve its energy security and curb dependence on imported gas from Russia and Iran.

In addition, fuelled by preparations for joining the European Union and the recent ratification of the Kyoto Protocol as an Annex I country, policy makers increasingly recognize the potential role of renewable power as part of the country's future energy portfolio.

Since the passage of the **Renewable Energy Law 5346** in 2005, 93 license applications for wind turbine projects have been filed with the Ministry of Energy representing a total of 1,100 MW new power generation capacity. A 47 MW geothermal-steam turbine plant whose feasibility study was funded by the USTDA has recently come online.

Landfill Gas-to-Energy is a fairly new concept in Turkey and has been pioneered by İSTAÇ at Kömürcüoda and Odayeri landfill sites in Istanbul and consequently by ITC Inc., at the Mamak

landfill site in Ankara, both employing reciprocation engines. ***If implemented, the proposed solid waste-to-energy plant will be the next step in the natural evolution of the WTE concept in Turkey and will most likely set precedence for other large municipalities.***

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### 3.3 Regulatory Framework

Up until the early 1980s all power generation, transmission and distribution activities were carried out as strict government monopoly by the Turkish Electric Corporation (TEK), under the oversight of Turkish Ministry of Energy and Natural Resources. Following the introduction of groundbreaking legislation to reform the country's power and energy sector in 1984, the resultant **Law 3096** has ended the government monopoly over power generation, paving the way for the private sector companies to Build, Own, Operate and Transfer (BOOT) power plants in Turkey. In 1993 TEK was dissolved into two independent state-owned companies; the Turkish Electricity Generation and Transmission Corporation (TEAS), which was responsible for generation and transmission of electricity until 2001, and the Turkish Electricity Distribution Corporation (TEDAS) which to date is still responsible for distribution of power to end users.

In 2001, the Turkish government enacted a new **Electricity Market Law**, which set the stage for further liberalization of power generation and distribution activities. The new law also created the **Energy Market Regulation Board (EPDK)**, which oversees the power sector and natural gas markets, including the setting of tariffs, issuing licenses, and assuring competition. After the passage of the Electricity Market Law, TEAS was split into separate state-owned companies: Turkish Electricity Generation Company (EUAS), Turkish Electricity Transmission Company (TEIAS), and Turkish Electricity Trading and Contracting Company (TETAS). Before the 2001 reforms, EUAS operated 91 percent of Turkey's power supply. However, EUAS is now under mandate to sell off most of its power plants and other holdings. In 2003, 27 state-owned coal and hydropower plants were transferred to a government holding company in preparation for privatization, accounting for 28 percent of the Turkish power generating market. Transmission of electricity will continue to be run by the state.

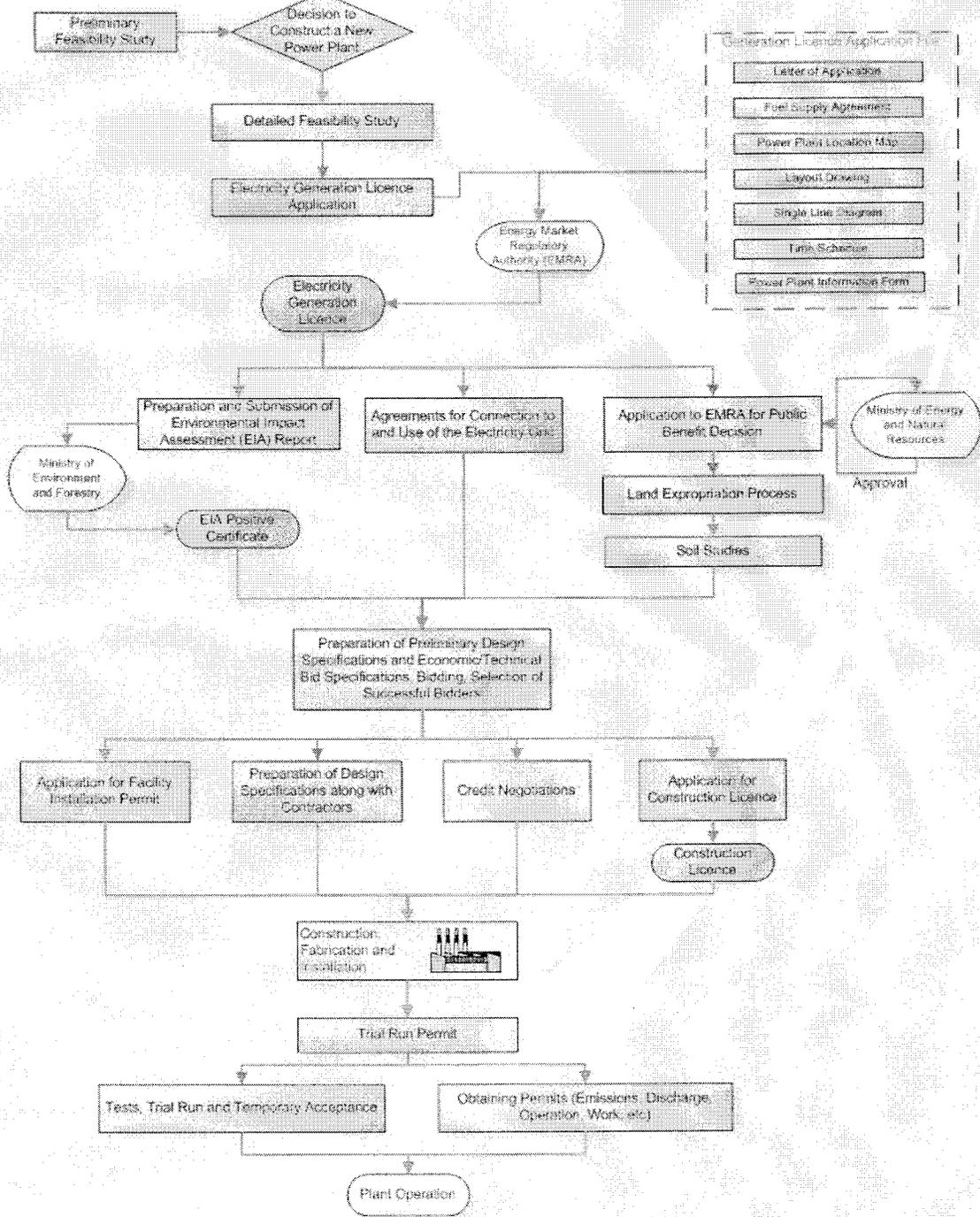
With the passage of the **Renewable Energy Law 5346** in 2005, special tariff and support incentives have been offered for environmentally friendly technologies attracting more investment to that segment of power generation.

In 2006, the EPDK approved the privatization of Turkey's 20 regional electricity grids. The EPDK has approved a new electricity tariff structure, the final step before Turkey could invite tenders to auction the distribution grids. The power grids have been sold in groupings of up to 6 regional grids at a time to encourage economies of scale and greater efficiency.

The first private sector power plants in Turkey were built in the late 1980's primarily to provide power and steam to the large textile mills. The plants of that era are typically gas turbine simple cycle or combined cycle plants with less than 150 MW generation capacity. Today, the Turkish independent power producers take on 500-1000 MW greenfield generation projects typically in international consortiums or in joint ventures. In Turkey, new power generation projects require a strict and sometimes lengthy Licensing and Permitting (L/P) process mandated by the Ministry of Energy and Natural Resources. The steps involved in the current L/P process for new generation is depicted in the algorithm below:



## CONSTRUCTION OF NEW THERMAL POWER PLANT BY PRIVATE SECTOR



last updated on 02 November 2008

Similarly, extensive legislation to regulate municipal waste, industrial waste, environmental emissions and public health are on the books in Turkey and are being enforced to varying degrees.

Among this legislation, the **Environmental Law 2872**, the **Public Health Law 1593**, the **Municipalities Law 1580 and 3030** dictate that with the exception of industrial waste, all municipal waste generated by households and commercial businesses be collected and disposed of by the local municipalities using sanitary means. In large cities such as Istanbul, it is the individual suburban municipalities who are responsible for the collection of municipal waste. The Greater City Municipality, as the central authority, is responsible for the further processing of MSW including incineration, recycling, landfilling, composting and waste-to-energy projects.

### **3.4 Municipal Waste and İSTAÇ, the Project Sponsor**

Although strict regulations on the management of solid waste are in place, illegal disposal methods such as open dumping and discharge into surface water are being used in the rural parts of Turkey. It is estimated that approximately 25 million ton of MSW are generated annually in Turkey. About 77% of the population receives MSW services including collection, treatment, composting and recycling of the waste material. In spite of efforts to change open dumping areas into sanitary landfills and to build modern recycling and composting facilities, Turkey still has over 2000 open dumps.

In Istanbul however, thanks to İSTAÇ, household waste material is being handled by hygienic means and utilized to varying degrees, the medical waste material is safely destroyed, and the methane gas emanating from the landfills is safely burned to generate electricity. Currently, 13 million residents of Istanbul generate about 14,000 tons of household waste every day, about 9,000 tons per day on the European side, and 5,000 tons per day on the Asian side of the city.

The City established İSTAÇ (The Istanbul Environmental Protection and Waste Material Recycling, Production and Trading Company) in 1994 to effect the sanitary handling, storage, separation, recycling and disposal of the city's municipal waste.

In Istanbul, the suburban municipalities collect the municipal waste in the 39 districts and truck them to transfer stations. At this point İSTAÇ takes over and after pressing the MSW in silo-trucks for volumetric reduction, ships it to the landfill sites. The Halkalı, Yenibosna, Baruthane, Silivri transfer stations process the MSW on the European side, whereas the Hekimbasi, Aydinli, Küçükbakkalköy transfer stations process the MSW on the Asian side of the city.

İSTAÇ owns and operates two sanitary landfill sites; the Odayeri Landfill in Göktürk (European side) and the Kömürcüoda landfill in Şile (Asian side). As of 2010, the remaining life of the former is estimated to be about 3 years, whereas the latter one is expected to stay operational for another 14-15 years. These landfills have been constructed with best available technology (BAT) in that, the municipal waste is completely isolated from the surrounding earth with liners. Leachate, which percolates down through the MSW piles is collected and treated in state-of-the-art water treatment system consisting of a Primary Clarifier, a Membrane Bioreactor (with nitrification-denitrification-ultrafiltration membranes), Nano-filtration Units and finally Sludge Dewatering Units.

Some separation of MSW is effected at the landfill sites by picking out the glass, paper, aluminum and plastics on conveyor belts.

All medical waste is collected separately by designated staff from 200 hundred area hospitals and shipped to the Odayeri landfill site for incineration. This facility incinerates about 42 tons per day of medical waste, at the same time generating about 500 kW of power for its own use.

İSTAÇ runs recycling programs in Istanbul. At designated paper drop-off/pick-up points across the city, İSTAÇ collects and recycles more than 400 tons of waste every month. Spent batteries are collected in designated boxes and buried in concrete lined chambers at the Kömürcüoda and Odayeri landfills.

İSTAÇ also operates a small RDF (Refuse Derived Fuel) facility, producing about 300 tons/day of 10,000 kJ/kg coarse RDF and 40 tons/day of 16,000 kJ/kg fine RFD. Currently, the fine RDF is being sold to a nearby cement factory as fuel.

In 2007 through competitive bidding, İSTAÇ retained Ortadogu Enerji Ltd. to build, own, operate, and transfer (BOOT) the current landfill gas-to-power facilities, gaining valuable project development and implementation experience. Since the commissioning of the projects, İSTAÇ has been sharing the profits generated by this project with Ortadogu Enerji. It is likely that the same BOOT model will be used if the proposed WTE facility should be implemented.

### **3.5 Final Determinations and Project Definition**

In summary, the reconnaissance mission and meetings with İSTAÇ officials revealed that İSTAÇ possesses and operates a modern solid waste management system in Istanbul. With the proper recycling, composting, incineration, methane mitigation, and leachate treatment techniques it sets a model for other large municipalities across the country and in Eastern Europe. İSTAÇ engineers have already started providing consulting services to other municipalities for the construction of sanitary landfills in Turkey.

Currently İSTAÇ's BOOT Contractor is in the process of expanding the existing landfill gas-to-power facilities by adding two more reciprocating engine-generator sets, thus reducing the future methane emissions and simultaneously generating more power for the nearby neighborhoods. Therefore landfill gas-to-energy has been removed from the scope of this Definitional Mission.

İSTAÇ's most critical and somewhat urgent need is the elimination of the MSW which has been accumulating rapidly at the Odayeri landfill site. At a dumping rate of 9,000 tons per day, this landfill site is estimated to run out of capacity in 3 years. It is well know that at least 90% volume and 80% mass reduction is achieved by incinerating the MSW and simultaneously generating electric power and/or thermal energy. Per "European Union Compliance Scenarios A and B" İSTAÇ is already contemplating to incinerate the MSW. For stable and trouble-free combustion in a WTE facility, the MSW needs to have a heating value of 6,500 kJ/kg or higher. Upon close inspection of the calorific values of the MSW collected from various city districts, Contractor was able to identify the districts that could produce a total of 3,000 tons/day of MSW with at least 8,000 kJ/kg heating value. Contractor recommended to İSTAÇ that the coarse RDF stock that is produced on a daily basis be blended with this pile to make sure that the overall heating value is

always maintained over 8,000 kJ/kg. There is enough real estate available around the Odayeri Landfill site to accommodate a sizeable WTE plant. The cooling water for the plant condenser could be drawn directly from the leachate treatment facility, in effect recycling the "garbage juice". **Therefore, the Contractor recommends that a 3,000 ton/day MSW-to-Energy Plant be implemented to provide a lasting solution to İSTAÇ's space limitation at the Odayeri landfill site. Such a WTE plant would have around 70 MW generation capacity, enough to power 350,000 households in the area and would help İSTAÇ comply with the European Union's guidelines for the incineration of MSW.**

İSTAÇ's current waste management master plan is mostly based on the recommendations of a USTDA funded Feasibility Study which was conducted by CH2M-Hill International Inc. in 1992. Upon implementation of the those recommendations, the current MWS transfer stations, the two landfill sites, the leachate treatment systems and the landfill gas-to-energy systems had been realized. Therefore the 1992 Feasibility Study appears to have served its purpose. Naturally given the conditions of the day, incineration of MSW for energy was not seen as a necessity back then and was not recommended due to the prohibitive costs associated with the WTE systems. Also at the time of the said Feasibility Study, there were no detailed data pertaining to calorific value of the MSW collected from different districts, hence it was concluded simply based on the average heating value of the MSW that stable combustion in a WTE facility could not have been sustained. Today, the realities are quite different. This raises the question whether the master plan should be updated as a whole to reflect today's conditions. Contractor does not see any value in nominating this as another Feasibility Study for USTDA funding due to multiple reasons;

1. The original management plan has already served its purpose and lead to the creation of the sanitary MSW management facilities,
2. Required modifications to the original management plan could be done in a piece-meal fashion with amendments by İSTAÇ per in-country requirements of the day,
3. Similarly, the European Union periodically issues mandates and recommendations which in turn might require frequent amendments to the management plan,
4. A general master plan would not directly lead to any specific project, therefore is not likely to create immediate export potential for US goods and services.

#### **4. Project Sponsor's Capability and Commitment**

As one of the most critical aspects of the Definitional Mission, Contractor assessed the Project Sponsor's capabilities and commitment to the proposed project. İSTAÇ's "Strategic Plan for the European Union Compliant MWS Waste Management, dated 2005" requires systematic incineration of 954,900 ton of MSW per year by 2010 per Compliance Scenario A -or- 398,700 ton per year by 2015 per Compliance Scenario B. Having realized that the Compliance Scenario A cannot be met in 2010, İSTAÇ is now aggressively pursuing Compliance Scenario B. A team of eight environmental engineers, four of which are full-time İSTAÇ staff have been investigating

potential WTE projects. They have already made inquiries to Vendors regarding WTE boilers and emissions control equipment.

A formal Letter of Commitment indicating İSTAÇ's dedication and commitment to the project is attached in Appendix I.

In addition, the Greater Istanbul Municipality's willingness to reveal their balance sheets (refer to Appendix II) and to sponsor the project on behalf of İSTAÇ through international loans is a strong indication as to the Project Sponsor's commitment for the proposed WTE Plant.

## 5. Developmental Impact

With the proposed renewable Waste-to-Energy Project significant developmental impacts are expected, at least at the local level. The potential developmental impacts per USTDA criteria are;

1. **Impact on Infrastructure:** With the proposed Waste-to-Energy plant, the remaining life of the MSW landfill will be extended. The electricity generated will power about 350,000 households generating about \$ 43 Million revenue every year for the Project Sponsor.
2. **Human Capacity Building:** During the construction of the WTE facility about 150 new jobs in construction, technical services/engineering and landscaping are likely to be created for 2 years. When the facility is in operation, it will require about 20 full-time operations and maintenance personnel who will receive special training.
3. **Impact on the Environment:** WTE plants significantly reduce the amount of MSW deposited at landfill sites. Typically about 90 % volume reduction and 80% mass reduction is achieved, at the same time minimizing leachate and methane formation and odor emissions. Methane is 21 times more detrimental than CO<sub>2</sub> from the global warming perspective.
4. **Technology Transfer and Market Oriented Reforms:** If implemented, the WTE facility might set precedence for other large municipalities in Turkey. Following this model, other municipalities could invite private sector companies to design, build and operate such renewable energy facilities at their landfill sites.

## 6. Implementation Financing

Based on the following preliminary cost estimate, the Project Sponsor might need to invest up to \$315,000,000 for turn-key implementation of the 3000 ton/day, 70 MWe WTE Facility. The boiler configuration for the WTE plant could either be 3x 920 ton/day (limited by the maximum grate size) or 4 x 750 ton/day. The cost estimate provided here is based on the latter configuration.

**PRELIMINARY COST ESTIMATE**

Item	Description	Cost
1	4x750 t/day WTE Boilers w/Environmental Controls	\$130,000,000
3	Steam Turbine	\$26,000,000
4	Condenser, Cooling Tower and Accessories	\$8,000,000
5	CCW Heat Exchanger	\$978,500
6	Boiler Feed Pumps and Drives	\$492,000
7	NH <sub>4</sub> OH and Limestone Hydration Tanks	\$650,000
8	Shop Fabricated Tanks	\$340,000
9	Fire Pumps and Accessories	\$223,000
10	Miscellaneous Pumps	\$336,000
11	Sump pumps and Sanitary lift pumps	\$97,000
12	MSW Separation Equipment	\$1,000,000
13	Gas storage equipment	\$28,000
14	Air compressor and accessories	\$210,000
15	Chemical feed and Steam and water analysis	\$205,000
16	Water treatment and Oil/Water separator	\$195,000
17	Fire Protection	\$350,000
18	B.O.P. Mechanical Equipment	\$3,125,000
19	Mechanical Bulk Commodities	\$9,339,000
20	Instrumentation & Control	\$3,903,000
21	Electrical Major Equipment	\$7,263,600
22	B.O.P. Electrical Equipment	\$510,800
23	Electrical Bulk Commodities	\$5,493,600
24	Switchyard & Transmission Lines	\$1,114,000
25	Civil/Structural (Assumes piles for all major foundations)	\$70,000,000
26	Freight-Ex Works To Site	\$2,136,500
	<b>Total Equipment and Material Costs</b>	<b>\$271,990,000</b>
27	Detailed Engineering and Procurement	\$8,400,000
28	Construction and Erection	\$16,500,000
29	Owner's Engineer/Consultant	\$1,200,000

30	Permitting and Licensing Fees		\$340,000
31	Land Acquisition Fees		Not accounted for
32	Wrap Insurance		\$924,000
33	Financing Costs		Not accounted for
	<b>Total EPC Cost w/5% Contingency</b>		<b>\$314,321,700</b>

For this undertaking, Greater Istanbul Municipality (IBB), the parent company of İSTAÇ, does not want to apply for Federal Treasury Guaranties to leverage the project. Rather, it is willing to sponsor the project on its own with an 85%/15% debt/equity structure which is consistent with the requirements of most International Financial Institutions. With a current credit rating of BB+ (Fitch) and annual revenues of \$ 2,913,739,743 (in 2009), the IBB seems to be qualified to leverage the remaining \$267,173,000 for the project. (See Qualifications Section).

The Financial Institutions most likely to provide loans for this project are the International Financing Corporation (IFC), The Turkish Industrial Development Bank (TSKB), and The European Bank for Reconstruction and Development (EBRD).

Turkey became a member of the **International Finance Corporation (IFC)** in 1956. As of December 2008, IFC has committed nearly \$5 billion of its own funds in key sectors including energy/power and has arranged nearly \$3 billion in syndications. Since Turkey's recovery from the 2001 financial crisis, IFC has focused on key investments which demonstrate strong positive impact on market sentiment. As of December 2008, Turkey represents IFC's fifth-largest country exposure.

With the support from the World Bank, the **Turkish Industrial Development Bank** (Turkiye Sinai Kalkinma Bankasi, TSKB) has recently established a loan program geared towards environmentally friendly investments, including renewable energy projects. TSKB recently provided a € 84,000,000 loan package to Akenerji A.S. of Turkey for the construction of three hydroelectric power plants. A WTE plant would also qualify in the renewable energy category.

The **European Bank for Reconstruction and Development Bank** (EBRD) which recently opened a Branch Office in Istanbul seems to be another potential financier for this project. In December 2009, EBRD created a new program titled "Turkish Sustainable Energy Financing Facility".

All of these financial institutions require that preliminary project feasibility and due diligence analysis be completed prior to starting any discussions on financing options. The DM Contractor performed high-level economic analysis under two scenarios and determined the NPV and pay-back period for the project as follows;

**Scenario 1) Currently In Effect**

Plant Life= 20 years, Discount Rate= 5%, Current Landfill Tipping Fee = \$8/ton, Electricity Sale Tariff= \$0.08/kWhr (currently in effect), Plant Availability= 7,800 hrs/year, Annual O&M Costs= \$9,500,000/year, Major Repairs= \$20,000,000 every five years.

**Scenario 2) Upon Amendments in the Renewable Energy Law (expected in July 2010)**

Plant Life= 20 years, Discount Rate= 5%, Incentivized WTE Tipping Fee = \$15/ton, Electricity Sale Tariff= \$0.18/kWhr (expected), Plant Availability= 7,800 hrs/year, Annual O&M Costs= \$9,500,000/year, Major Repairs= \$20,000,000 every five years.

**PRELIMINARY PLANT ECONOMICS**

SENSITIVITY	NET PRESENT VALUE	PAY-BACK PERIOD
Scenario 1) Tariff=ϕ8 kWhr	\$228 Million	7.9 years
Scenario 2) Tariff=ϕ18 kWhr	\$851 Million	3.7 years

Despite its high initial capital cost, the project is economically feasible and results in a reasonable pay-back period under the current conditions (i.e. scenario 1). This is mainly due to the fact that, unlike fossil fuel power plants there is no fuel cost involved in WTE, rather the plant Owner gets paid a tipping fee by the ton to incinerate the MSW.

As discussed during the meetings, if IBB raises the tipping fee to \$15/ton to incentivize the WTE concept, and if the tariff should be raised to ϕ18 kWhr this summer by the EPDK, the project would then become very profitable resulting in less than 4 year pay-back period.

With the preliminary cost estimate and the NPV and pay-back analyses at hand, Contractor met with Officials of the TSKB, IFC and the EBRD in Istanbul in the given order. Both the TSKB and the EBRD indicated interest in participating in a syndication loan should the IFC take the lead to organize such a loan facility.

The IFC is willing to organize the syndication loan for 85% of the project total. Terms of this financing package would be 2.5 years grace period, 10 year tenure and Libor+450 basis point for interest. With Libor hovering under 0.30%, this translates to about 4.8% interest in May 2010.

In a parallel course, Contractor investigated the **US Exim Bank** credits for the US manufactured equipment and services portion of the project. Since the U.S. portion is estimated to be less than 50% of project, US Exim Bank would evaluate the financing possibility only should the foreign Exim Banks initiate the syndication.

Currently, ISTAÇ is not interested in pursuing a U.S. based partner for the project. Therefore, financing from the **Overseas Private Investment Corporation** (OPIC) was not investigated.

## 7. U.S. Export Potential

Turkey, traditionally a U.S. Technology and Equipment importer for most of her power generation plants (wind, hydropower, geothermal, gas turbine based combined cycle, convention fuel oil or coal-fired plants) is very likely to offer the same export potential for this WTE plant. Turkish companies are well aware that "Made in USA" means high quality and reliability. U.S. Dollar's relatively low parity against the Euro and the Japanese Yen renders the U.S. made equipment competitive in today's market.

The majority U.S manufacturers listed below are very well known in the Turkish energy market through previous projects and are likely to export heavy equipment for the proposed project as well;

**Solid Waste Boilers:** Babcock Power; Enders Engineers; Dynamis  
**Deionization and Reverse Osmosis Systems:** NALCO, GE-Betz; US Filter  
**Steam Turbines:** General Electric; Dresser-Rand  
**Electric Generators:** Ideal Generator Co.; Electric Machinery; Kato  
**High Pressure Steam System:** Shaw Group; Bentech Pipe Inc.  
**Steam Conditioning Valves:** CCI; Emerson-Fisher  
**Condensers:** Graham; Yuba  
**Cooling Towers:** Midwest; International Cooling Tower  
**Feedwater and Condensate Pumps:** Flowserve; Goulds; Peerless  
**Fire Protection Systems:** F.E. Moran; Grinnell  
**Transformers:** GE-Prolec; Waukesha; VA Tech  
**Plant Control Systems:** Honeywell, Foxboro  
**MCCs:** Allen-Bradley; Cutler-Hammer  
**Power Cable:** Houston Wire and Cable; Anixter Cable  
**Switchgear:** General Electric, ABB USA  
**Environmental Controls:** Wheelabrator; McGill

Even though some of these US manufacturers use foreign made components, the bulk of their equipment is made and/or assembled here in the U.S.

As presented in Section 6, the total material and equipment cost for the plant is estimated at \$271,990,000. Unfortunately, the US boiler manufactures hold a small share in the WTE market today and may not be chosen as the boiler supplier for the project. Similarly, the steam turbine could be easily be procured from European or Japanese manufacturers. Even the General Electric Company might supply the steam turbine from their manufacturing facility in France should they be selected as the steam turbine vendor. This leaves only Dresser-Rand as the true American steam turbine manufacturer in the 70 MW frame size.

Since it is very unlikely that the US manufacturers will land the boiler and steam turbine accounts, upon deducting the corresponding amounts -and some of the Turkish made, smaller equipment and construction materials- from the Preliminary Cost Estimate on page 14, one could arrive at the maximum possible US export potential. This amount is around \$ 95 Million and still is an optimistic estimate in that it could only be realized if IBB moves ahead with the project on a BOOT or BOO basis to build a high quality and reliable facility. In the pessimistic scenario on the other hand, IBB would retain ownership and have the WTE plant built on a Lump Sum-Turn Key (LSTK) basis. The LSTK Bidders would then be compelled to quote lower price yet lower quality equipment and components such as from Eastern Europe, China, and

Korea and almost all of the construction materials from Turkey to land the Contract. This might automatically cut the US export potential by more than half, say to 45 Million.

Therefore it would only be realistic to forecast a wide range for the export potential of U.S. made equipment based on both scenarios. The realistic range is \$45 - 95 Million.

To assess the export potential for Owner's Engineering, Design and EPC services, Contractor contacted the likely U.S. Engineering Firms. The engineering firms which indicated interest are:

URS; Black & Veatch; Sargent & Lundy and WorleyParsons, representing a \$9,600,000 export potential for white collar services.

ENKA İnşaat ve Sanayi A.Ş, the largest industrial construction company in Turkey and Bechtel's regional nonexclusive partner, has already indicated interest to team up with a U.S. Engineering Firm to undertake the Engineering, Procurement and Construction (EPC) of the WTE Plant.

Overall, the proposed project seems to offer \$55 to \$105 Million export potential for US equipment and services.

## 8. Foreign Competition

In today's global economy, the U.S. is not the sole source supplier of major power equipment anymore. Although U.S. made equipment is in demand in Turkey, certain components of the proposed WTE plant could be procured from nearby European suppliers due to the ease of logistics/transportation or simply due to price advantage. Being the world leader in WTE Boilers, AE&E Von Roll of Switzerland is most likely to land the boiler contract for the proposed project.

Certain Japanese heavy equipment manufacturers have representation in Turkey making it easier for them to market their products in the country. Steam turbine manufacturers are among these.

Lower price items such as small motors, small bore piping, low voltage cable, CCTV system, cooling tower, construction materials, etc. are likely to be procured from Turkish manufacturers.

The following foreign major equipment manufacturers and engineering firms are already in (or trying to break into) the Turkish energy market;

**Solid Waste Boilers:** Von Roll (Switzerland); Alstom (France); Eck Rorh Kessel (Germany)  
**Deionization and Reverse Osmosis Systems:** Siemens (Germany); Goema (Germany); Degremont (France)  
**Steam Turbines:** Siemens (Germany); Ansaldo (Italy); Fuji (Japan); Mitsubishi (Japan)  
**Electric Generators:** Brush (Czech Republic); Siemens (Germany); ABB (Switzerland)  
**Cooling Towers:** SPX (Turkey); GEA (Germany and Hungary)  
**Feedwater and Condensate Pumps:** KSB (Germany), Sultzer (Switzerland)  
**Transformers:** ABB (Switzerland), Siemens (Germany)  
**Plant Control Systems:** Yokogawa (Japan), Siemens (Germany), ABB (Switzerland)  
**Switchgear:** ABB (Switzerland); Areva (France)  
**Environmental Controls:** AE&E Von Roll (Switzerland)

**Engineering and Design Services:** Fichtner (Germany); SNC-Lavalin (Canada); PB Power (UK); Lahmeyer (Germany)

## 9. Environmental Impact

The landfills owned and operated by İSTAÇ are mature landfills in that substantial amount of volume has already been taken up by municipal waste deposits. With additional dumping, the amount of undesirable by-products such as leachate, municipal waste sludge, renegade methane and odor emissions and all health hazards associated with these will keep increasing. The proposed WTE plant will burn and reduce the volume of the MSW by 90 %, which would otherwise be deposited in the landfills. Such volumetric reduction of MSW would extend the remaining life of the landfill sites and significantly reduce the amount of top soil required to cover the fresh MSW after each dumping.

More specifically, by employing a WTE facility at these landfill sites the following potential environmental problems will be mitigated;

1. The existing leachate treatment system has a fixed membrane capacity which will be taxed overtime with the continued dumping of MSW. This in turn would increase the likelihood of groundwater contamination and the associated health risks.
2. If the MSW is not burnt as collected, it would keep creating waste sludge in the landfill basin which is very hard to get rid of once formed. Municipal waste sludge cannot be incinerated in self-sustaining mode. Costly mechanical or thermal pretreatment systems would be required to incinerate the sludge.
3. With each load of MWS deposited into landfills, additional methane would automatically be generated in six months to a year time frame. Even though the existing landfill-gas-to-energy plants suck the landfill gas out the deposited MSW piles, the gas collection efficiency is limited to about 80% and drops significantly as the landfill expands laterally. Therefore as the landfills expand renegade methane emissions will also increase. Methane is a greenhouse gas and 21 times more potent than its combustion product, carbon dioxide.
4. Landfills cannot be expanded indefinitely depriving the surroundings of large lots of land which could otherwise be used for habitation, cultivation, commerce or recreation.

İSTAÇ is very aware that all these problems could simultaneously be addressed by implementing the proposed WTE plant.

Naturally, uncontrolled incineration of MSW would create environmental problems of its own; specifically unacceptable levels of NO<sub>x</sub>, SO<sub>x</sub>, CO, unburnt VOCs, dioxins, furans and toxic trace metal emissions. The controversial 5 MW rotary kiln waste incinerator owned by the (name withheld) Municipality in Turkey is commonly cited by the environmentalist groups as a testament to this fact due to its purported lack of proper flue gas scrubbing equipment. However, when supplemented with the state-of-the-art emissions controls, the WTE is classified as a renewable source of energy and environment friendly technology. Modern WTE facilities do comply with World Bank's strictest emissions criteria which is almost identical to the EU air emissions standards.

Since Turkey is a signatory to the Kyoto Protocol as an Annex I country and is a prospective member of the EU, a detailed Environmental Impact Assessment (EIA) is stipulated in the Terms of Reference of the Project Feasibility Study.

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

No adverse impacts on U.S. Labor are foreseen resulting from the proposed WTE facility in Turkey. The project would not result in any commodities that could be imported to U.S. If implemented, it will only produce electricity and create new O&M jobs locally without posing any threats to U.S. Labor.

On the other hand, positive impacts are anticipated as U.S. made equipment and spare parts are very likely to be exported, creating job security in the design and manufacturing sectors. Similarly, high price man-hours are likely to be created for U.S. Engineering companies as the Detailed Design and EPC phases of the project will require the services of white collar specialists.

Based on Contractor's past experience, if the project should get implemented with U.S. equipment and U.S. know-how, the Project Sponsor is also likely to retain consultants from the U.S. during the life of the WTE Plant.

## **11. Qualifications**

### **11.1 Project Sponsor**

Even though the proposed project is being developed and will eventually be implemented by the qualified engineers of İSTAÇ, it is the Greater Istanbul Municipality (IBB) who will assume the financial responsibility for the undertaking. Along with the İSTAÇ's General Manager and the Project Manager, Contractor visited the Treasury Office of IBB in Istanbul to review their Assets and Balance Sheets and to discuss their credit worthiness.

IBB's 2009 Revenues and Expenditures are presented both in TL (Turkish Lira) and in USD in Appendix II. At the close of 2009, IBB spent \$4,134,749,830 for all its municipal activities and collected \$2,913,739,743 in revenues. IBB reconciles expenditures with revenues with loans from several commercial banks and occasionally from the World Bank. IBB's current credit ratings are:

Fitch, BB+ (Standing)  
Standard and Poors, BB- (Standing)  
Moody's, BA2- (Standing)

IBB's 2009 Assets are also tabulated in Appendix II, under the title "BILANÇO". Numbers are in TL. Using the current USD to TL parity of 1.49, one can determine that liquid assets were \$2.54 Billion, non-liquid assets (real estate, buildings, machinery, vehicle fleets and all other properties) were worth \$22.65 Billion in 2009.

Given its high credit rating and the strong collateral position, the IBB would not have much difficulty leveraging the project as already acknowledged by the IFC's Istanbul Office.

### **11.2 FS Contractor's Qualifications and Selection Criteria**

Should the USTDA approve the recommended budget for the Feasibility Study, the FS Contractor will be chosen from a pool of applicants solely based on technical qualifications. U.S. Architect/Engineer (A/E) firms with similar power plant and energy systems experience are encouraged to compete for the Feasibility Study.

The selection criteria to be used in ranking the bids received from the qualified A/E firms are as follows:

**Professional Experience (40%)** - Bidders shall propose a project team that will be fully qualified to execute the entire scope the Feasibility Study. The proposed staff should have qualifications and experience in project management, multi-disciplines of engineering including mechanical, electrical, environmental, civil, structural and I&C, cost estimating and scheduling, economic analysis and project funding, design and drafting. Experience in the 50-200 MW range with solid fuel or biomass with utility or independent power producers is the main requirement. Since WTE Plants are not very common, Bidders may retain outside WTE and biomass consultants to supplement their engineering team. The qualified bidder will be expected to provide evidence of satisfactorily executing at least six (6) similar projects within the past 10 years either as the Plant Designer or the Owner's Engineer.

**Proposed Work Plan (35%)** - Bidders shall demonstrate good understanding of all the TOR tasks. Their approach to tackle the tasks should be in agreement with the generally accepted engineering methods used in the energy and power sector. The work plan should be detailed and responsive to the requirements presented in the TOR and should prove value-added in the EPC Phase of the Project.

**International + Host Country Experience (15% + 10%)** - Bidders are encouraged to list their international power project and/or FS experience. The ideal Bidder will have successfully completed at least (2) two similar or larger size power projects by the time of bid evaluations, preferably one of them being in Turkey.

## **12. Justification**

Presently, the City of Istanbul is incurring significant costs for the disposal of MSW in two large landfills. These landfills are now considered "mature", requiring new solutions to the city's municipal waste problem. The proposed WTE plant, if implemented, would provide such solution and simultaneously create positive cash flow for the city for the next 20-25 years through the sale of electric power. This project is posed to set a unique example for other large municipalities across the host country because in Turkey, even though the metropolitan centers such as Istanbul and Ankara enjoy state-of-the art MSW services, the rest of the country needs to catch up in sanitary municipal services by the way of example.

If implemented as proposed, the WTE facility with its state-of-the art environmental controls will enjoy a high profile providing considerable good will to the U.S. Government for its support. In 1997 USTDA had supported a feasibility study, for the management of municipal waste in Istanbul, which is still being acknowledged on İSTAC's website today. ([www.istac.com.tr](http://www.istac.com.tr)).

The proposed WTE plant bears many similarities to the Germencik Geothermal Power Plant in Turkey which was initially supported by the USTDA and has eventually created \$ 23 Million worth of U.S. exports in goods and services. Like Germencik, this plant is also a renewable energy plant, and with its multiple boiler configuration, will be the first of its kind in the host country. The current Renewable Energy Law in Turkey already incentivizes biomass projects and is in the process of getting amended to include WTE as well. Therefore the proposed model project offers sizeable U.S. export potential and downstream business opportunities for the U.S. companies for years to come.

*Contractor highly recommends that USTDA proceed with the Feasibility Study thus providing the necessary vehicle to the U.S. firms to make an early entry in the WTE market in this part of the world.*

### **13. Terms of Reference**

In this section of the DM Report, the scope of the proposed Feasibility Study (FS) is defined task by task. The FS Phase of the project will be funded through a grant from the USTDA, but the FS Contractor will be chosen directly by İSTAÇ from a pool of applicants. During the FS Phase of the project, the Contractor chosen is expected work to closely with İSTAÇ to advance the project to the pre-EPC stage.

In carrying out the Feasibility Study, the selected Contractor should address all issues related to the WTE Plant configuration in terms of fuel (i.e., MSW) consumption and power generation, optimal siting, technology and equipment selection, economic viability, environmental impacts, legal issues, and financing options. Whenever possible, the FS Contractor should give preference to world-wide accepted American design standards (such as ASME, IEEE, ANSI) and ensure that the technical specifications are prepared in such way so as to not preclude American equipment manufacturers and service providers from bidding during the project implementation phase. The specifications could allow reputable international manufacturers to submit bids to complement US made equipment and services.

#### Task 1: Condition Assessment at Site and Final Sizing of the WTE Facility

The FS Contractor shall travel to Istanbul, Turkey for a kick-off meeting with İSTAÇ and to scout the Odayeri and Kömürçüoda landfill sites. As a part of the condition assessment, Contractor shall determine the long term availability of high calorie MSW at the project sites. For the final sizing of the boilers, availability of MSW only with LHV of 6,500 kJ/kg or higher should be considered. The fuel supply assessment should be based a minimum plant life of 20 years. If necessary, Contractor shall determine the best method to enhance the heating value of the MSW for reliable, self-sustaining operation of the WTE plant. In sizing of the facility, the future (projected) MSW generation rates should be taking into consideration. At this stage FS Contractor shall also evaluate the boiler options, (i.e., whether direct incineration to steam generation or MSW gasification to steam generation; whether 4x750 ton/day or 3x920 ton/day) and the cogeneration potential (whether to generate both heat and electricity) to optimize the energy yield. Consequently, the Contractor shall prepare Heat and Mass Balances for the proposed WTE thermal cycle.

Task 1 constitutes the first milestone in the project. Upon completion of Task 1, the FS Contractors shall issue Milestone Report 1 to the Project Sponsor.

### Task 2: Preliminary Design of the WTE Facility

Based on the information gathered in Task 1, the FS Contractor shall proceed with the preliminary design of the WTE Facility. This will only be a conceptual design, detailed enough to produce a reasonably accurate EPC cost estimate, and project schedule. At bare minimum, the preliminary design shall include;

- Plant Lay-out
- Optimum Heat and Mass Balance indicating best plant performance
- Major Equipment List
- Process Flow Diagrams
- Electrical One Line Diagram

### Task 3: Environmental and Developmental Impact Assessment

The FS Contractor shall prepare a preliminary Environmental Impact Assessment (EIA) based on the WTE technology chosen. In the EIA, the Contractor shall identify, and propose remedies for any potential air, water, or noise pollution increases that are likely result from the Project. The chief objective of this task is to ensure that the proposed Project will comply with the European Union's environmental criteria, the World Bank emissions criteria and the Kyoto Protocol Annex I.

The Contractor shall also provide a potential Development Impact Assessment (DIA) outlining the economic and social development outcomes of the projects and how the host country will benefit in the long term from the implementation of the project. For the DIA, Contractor shall build on the DIA provided in the Definitional Mission addressing the following;

- **Infrastructure:** A summary of the foreseeable impacts on infrastructure with justifications,
- **Market-Oriented Reforms:** A brief description of regulatory or institutional changes the project might lead to,
- **Human Capacity Building:** A description of the number and type of jobs that would be created to construct, procure for and operate the plant, including the subcontracted and outsourced positions. A brief description of the training program(s) required to prepare/qualify the candidates for these positions,
- **Technology Transfer and Spin-Off Effects:** A description of any advanced technologies that will be implemented in the host country for the first time as a part of the project. A brief evaluation of the project as a technology demonstrator to other users in the host country.

### Task 4: Detailed Cost Estimate and Implementation Schedule

Having chosen the most suitable WTE technology and produced the plant-lay out and the major equipment list in Task 1, the Contractor shall prepare an EPC cost estimate. FS Contractor's estimate should include a detailed breakdown of equipment and materials for all major components, including but not limited to the water treatment system, boilers, large bore and high pressure steam piping, steam turbine, condenser, mechanical and electrical balance of plant, instrumentation and controls, and electrical interconnection. The cost of land acquisition and cost of financing should be determined and added to the cost estimate at this stage.

For the EPC implementation schedule, the FS Contractor is encouraged use generally accepted project management software such as Microsoft Project or Primavera.

#### Task 5: Plant Economic Analysis

Even though project profitability is not the main objective of this potential investment, for the WTE technology chosen the FS Contractor shall conduct a plant economic analysis based on current and future (i.e. expected) parameters such as the tipping fees, electricity tariff rates, interest rates and financing costs. The Contractor shall calculate net present value, payback period, and internal rate of return for the alternative scenarios. Upon completion of this a task, Milestone Report 2 shall be issued to the Project Sponsor.

#### Task 6: Legal Framework Review

In this task, the Contractor shall review the pertinent regulatory and legal framework to reflect the latest developments in the Renewable Energy and MSW related laws of Turkey. European Union compliance, permitting and licensing requirements with the Ministry of Energy, local building codes, local right-of-way, and zoning ordinances should be taken into account before the Project moves into the EPC stage. Any problematic or lengthy permitting and licensing issues need to be identified at this stage.

#### Task 7: Financing Options Review

The Contractor shall follow up with the Financial Institutions that have been already contacted during the Definitional Mission and/or develop his own financing strategies. These financial institutions are; International Finance Corporation, Turkish Industrial Development Bank and the European Bank for Reconstruction and Development. It is the FS Contractor's responsibility to obtain Letters of Interest (LOI) from potential lender(s). For syndicated loans, all lending institutions and their portions in the portfolio should be identified. The current terms and conditions for each of the potential sources of funding need to be clearly stated in the LOIs.

#### Task 8: EPC Tender Documents Preparation

As a stand-alone EPC Tender Document, the Contractor shall prepare a set of bidding specifications for İSTAÇ to solicit EPC Bids with from interested parties. The EPC Tender Documents shall include but not be limited to:

- (a) Project Definition, (b) Technical Specifications based on the Preliminary Design and Environmental Impact Assessment, and (c) Draft Commercial Terms and Conditions of the EPC Contract.

Technical Specifications should be divided into sections covering;

- (a) Major Mechanical, Electrical and I&C Equipment, (b) Civil Works and Construction,
- (b) Plant Narrative (i.e. Design Basis), (d) Plant Performance Requirements (e) Start-up and Commissioning f) Project Implementation Schedule

The Draft Commercial Terms and Conditions should include the Penalties and Liquidated Damages which would apply in case of non-compliance with the Performance and Schedule requirements. Upon completion of Task 8, Milestone Report 3 shall be issued to the Project Sponsor.

**Task 9: Final Report**

The FS Contractor shall prepare and submit to the Project Sponsor a Draft Final Report which includes all analyses and findings performed under Tasks 1-7 and a brief discussion of Task 8 above. The Draft Report shall be prepared per USTDA report guidelines and the Grant Agreement. The EPC Tender Documents prepared in Task 8 shall be submitted under separate cover. Once the Project Sponsor has provided comments to the Draft Report, the Contractor shall incorporate all relevant comments and issue to the Project Sponsor and the USTDA the "Final Report". The Final report will also serve as Milestone Report 4.

**14. Proposed Feasibility Study Budget and Schedule**

Based on the man-hour requirements to complete each tasks listed above and the average U.S. engineering rates, the DM Contractor prepared an itemized budget for the proposed Feasibility Study. The budget breaks down FS Contractor's Labor, Host Country Labor, Travel Expenses and Other Direct Charges. The total budget for the proposed Feasibility Study is estimated to be **\$491,160**.

**PROPOSED FEASIBILITY STUDY BUDGET**

Task No	Task Title	CONTRACTOR LABOR			Total \$
		Specialty	Man-days	xDaily Rate	
1	Condition Assessment at Site	Project Manager	10	1,120	11200
		Boiler Specialist	20	880	17600
		Biomass Consultant	15	880	13200
		Performance Engineer	20	720	14400
		<b>MILESTONE 1</b>	<b>TASK 1 TOTAL =</b>	<b>65</b>	
2	Preliminary Design	Project Manager	6	1,120	6,720
		Boiler Specialist	10	880	8,800
		Mechanical Engineers	40	960	38,400
		Electrical Engineers	22	960	21,120
		Civil/Structural Engineers	15	960	14,400
		I&C Engineers	15	960	14,400
		Draftsmen	40	560	22,400
		<b>TASK 2 TOTAL =</b>	<b>148</b>		<b>\$126,240.00</b>
3	Environmental and Developmental Impact	Project Manager	7	1,120	7,840
		Environmental Engineer	30	960	28,800
		Cost Estimator	4	960	3,840
		<b>TASK 3 TOTAL =</b>	<b>41</b>		<b>\$40,480.00</b>
4	Cost Estimating and Scheduling	Project Manager	4	1,120	4,480
		Cost Estimator	13	960	12,480
		Project Scheduler	10	880	8,800
		Multi-Discipline Engineers	3	960	2,880
		<b>TASK 4 TOTAL =</b>	<b>30</b>		<b>\$28,640.00</b>

Definitional Mission Turkey: Solid Waste Management/Waste to Energy DM-CO2010810006

<b>5 Plant Economic Analysis</b>	Project Manager	5	1,120	5,600	
	Finance Specialist	15	960	14,400	
<b>MILESTONE 2</b>	<b>TASK 5 TOTAL =</b>	<b>20</b>		<b>\$20,000.00</b>	
<b>6 Legal Framework Review</b>	Project Manager	4	1,120	4,480	
	Legal Advisors	8	1,120	8,960	
	<b>TASK 6 TOTAL =</b>	<b>12</b>		<b>\$13,440.00</b>	
<b>7 Financing Options Review</b>	Project Manager	5	1,120	5,600	
	Finance Specialist	13	960	12,480	
	<b>TASK 7 TOTAL=</b>	<b>18</b>		<b>\$18,080.00</b>	
<b>8 EPC Tenders Preparation</b>	Project Manager	15	1,125	16,875	
	Boiler Specialist	15	880	13,200	
	Mechanical Engineers	30	960	28,800	
	Electrical Engineers	10	960	9,600	
	I&C Engineers	8	960	7,680	
	Civil/Structural Engineers	8	960	7,680	
	Environmental Engineer	10	960	9,600	
	Draftsmen	20	560	11,200	
<b>MILESTONE 3</b>	<b>TASK 8 TOTAL =</b>	<b>116</b>		<b>\$104,635.00</b>	
<b>9 Final Report Preparation</b>	Project Manager	7	1,125	7,875	
	Boiler Specialist	1	880	880	
	Mechanical Engineer	1	960	960	
	Electrical Engineers	1	960	960	
	I&C Engineers	1	960	960	
	Civil/Structural Engineers	1	960	960	
	Environmental Engineer	1	960	960	
	Secretarial	10	400	4,000	
<b>MILESTONE 4</b>	<b>TASK 9 TOTAL =</b>	<b>23</b>		<b>\$17,555.00</b>	
	<b>TOTAL CONTRACTOR LABOR=</b>			<b>\$425,470.00</b>	
<b>HOST COUNTRY LABOR</b>					
<b>No.</b>	<b>Activity</b>	<b>Specialty</b>	<b>Man-days</b>	<b>xDaily Rate</b>	<b>Total \$</b>
1	In-country Logistics/ Translation Services	Guides/Interpreters	18	320	5760
2	Environmental Impact/Permitting Review	Environmental Engineer	20	400	8000
3	Legal Framework Review	Environmental Engineer	20	440	8800
4	Procurement Consulting	Multi-Discipline Engineers	15	400	6000
		<b>TOTAL HOST COUNTRY LABOR</b>	<b>73</b>		<b>\$28,560.00</b>
		<b>TOTAL DIRECT LABOR =</b>			<b>\$454,030.00</b>
<b>TRAVEL EXPENSES</b>					<b>Total \$</b>
	Airfare for 3 People/ 3 Trips		3x3	1,800	14,400
	Ground Transportation		3x3x2	60	1,080
	Ground Transportation in Host Country		3	400	1200
	Per Diem based on 5 Day Trips		3x3x5	350	15,750
		<b>TOTAL TRAVEL=</b>			<b>\$32,430.00</b>
<b>OTHER DIRECT COSTS</b>					
	Communication				2,000
	Reproduction + Binding				1,500
	Courier Services				1,200
		<b>TOTAL ODCs =</b>			<b>\$4,700.00</b>
		<b>PROJECT TOTAL= TOTAL DIRECT LABOR+TRAVEL+ODCs =</b>			<b>\$491,160.00</b>



## 15. Contacts

Principle contact at İSTAÇ;

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For follow-up on Definitional Mission;

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## APPENDIX I- LETTER OF COMMITMENT FROM İSTAÇ



**İSTAC A.Ş.**

Sayı : 41:00/03

13/05/2010

Konu : İstanbul Katı Atık Master Planı ve  
Termal Bertaraf Sistemi Fizibilite Çalışması

**UNITED STATES TRADE and DEVELOPMENT AGENCY  
(USTDA)**

İstanbul ili Katı Atık Yönetim faaliyetleri kapsamında, Master Plan ve Termal Sistem Fizibilite Çalışmalarının yapılması konusunda, İstanbul Büyükşehir Belediyesi Atık Yönetimi Müdürlüğü ile birlikte teknik ekibimizin çalışmaları devam etmektedir. Planlanan faaliyetlerin İstanbul'un Atık Yönetim Stratejisine büyük katkı sağlayacağını düşünüyor, bu kapsamda yapılacak çalışmaların deneyimli ekiplerle yürütülmesi için gayet sarf ediyoruz.

Avrupa Birliği uyum sürecinin ve yerel mevzuatın getirdiği zorunluluklar sebebiyle İstanbul için termal sistemlerle atık bertarafı kaçınılmaz olmuştur. Bu vesileyle İstanbul Büyükşehir Belediyesi ile birlikte bir teknik heyet oluşturulmuş ve termal sistemler için muhtemel yer alternatifleri üzerinde çalışmalar devam etmektedir. Bu yatırıma yönelik Fizibilite çalışmalarının kurumumuz tarafından kararlılıkla yürütülerek tamamlanacağını bildirir çalışmalarınızda başarılar dileriz.

Saygılarımızla

  
**Şenol YILDIZ**  
Proje Etüt Müdürü

  
**Osman AĞÜL**  
Genel Müdür

İSTAC A.Ş. Genel Müdürlüğü

Adres: Piyalepaşa Bulvarı No: 74 34379 Şişli - İSTANBUL Tel.: (0212) 230 60 41 Faks: (0212) 231 76 14

e-posta: istaci@istac.com.tr www.istac.com.tr

İSTANBUL BÜYÜKŞEHİR BELEDİYESİ

[TRANSLATION OF THE LETTER OF COMMITMENT]

No:41:00/03

Re: Istanbul MSW Master Plan and Feasibility Study for MSW Incineration

May 5, 2010

Unites States Trade Development Agency,

In coordination with the Greater Istanbul Municipality, our technical unit has been re-evaluating the MSW Master Plan and the feasibility of MWS Incineration and energy generation. We believe that the proposed WTE project will greatly contribute to our MSW management strategy. On our behalf, we are making all efforts to continue with this study with a qualified project team.

Today, in order to achieve European Union compliance and to meet the local ordinance requirements, thermal destruction of the MSW seems inevitable. In association with the Greater Istanbul Municipality, a task force has been investigating alternative sites to accommodate such WTE Plant. We would like to state that we are determined to see through to completion any Feasibility Studies that USTDA may sponsor.

Regards,

Senol Yildiz

Osman Akgul

Project Development Manager

General Manager

**APPENDIX II - IBB's 2009 Revenues**

**IBB's 2009 Expenditures**

**IBB's 2009 Assets and Balance Sheet**

**METROPOLITAN MUNICIPALITY OF ISTANBUL**  
**REVENUE BUDGET & REALIZATION ACCORDING TO ECONOMIC CLASSIFICATION OF 2009**

STATEMENT	BUDGET (TL)	31.12.2009 REALIZATION (TL)	RATE OF REAL.	BUDGET (USD)	31.12.2009 REALIZATION (USD)
<b>TAX REVENUES</b>	<b>4.086.003.000</b>	<b>3.480.346.806</b>	<b>86%</b>	<b>2.733.367.848</b>	<b>2.335.460.358</b>
<b>GOODS &amp; SERVICES TAX COLLECTED WITHIN THE BOUNDRIES</b>	<b>45.080.000</b>	<b>37.855.059</b>	<b>84%</b>	<b>30.150.552</b>	<b>25.329.581</b>
Entertainment Tax	13.910.000	8.945.966	64%	9.307.461	5.985.926
Fire Insurance Tax	8.550.000	6.534.603	78%	5.720.977	4.372.435
Announcement and Advertisement Tax	22.600.000	22.374.489	99%	15.122.114	14.971.220
Electricity and Gas Consumption Tax	0	0	100%	0	0
<b>SHARES RECEIVED FROM TAX REVENUES</b>	<b>3.990.000.000</b>	<b>3.408.186.973</b>	<b>85%</b>	<b>2.969.789.227</b>	<b>2.280.473.050</b>
(1) Shares Received from Central Government Tax Revenues	3.930.000.000	3.360.681.030	86%	2.629.642.021	2.248.685.868
Share Received from Law Nr. 5779 (Bank of Provinces)	510.000.000	494.612.207	97%	341.251.255	330.954.973
Share Received from Law Nr. 5779 (Central Government)	3.420.000.000	2.866.048.823	84%	2.288.390.766	1.917.730.895
(2) from Local Government	60.000.000	47.505.944	79%	40.147.206	31.787.182
Shares from Environmental Cleaning Tax	25.000.000	24.204.440	97%	16.728.003	16.195.677
Shares from Real Estate Tax	35.000.000	23.301.504	67%	23.419.204	15.591.505
<b>CHARGES</b>	<b>49.943.000</b>	<b>44.323.473</b>	<b>89%</b>	<b>33.417.966</b>	<b>29.657.727</b>
<b>NON-TAX REVENUES</b>	<b>869.874.000</b>	<b>849.836.518</b>	<b>114%</b>	<b>381.314.162</b>	<b>434.884.856</b>
<b>CIRCULATING CAPITAL AND SIMILAR ASSOCIATION REVENUES</b>	<b>81.000.000</b>	<b>80.788.026</b>	<b>100%</b>	<b>54.198.729</b>	<b>54.055.554</b>
Income of Social Services	11.000.000	14.770.000	134%	7.360.321	9.882.904
Income of Natural Gas Service (dividends from IGDAS)	70.000.000	12.221.121	17%	46.838.407	8.177.398
Other Associations Revenues (Revenues of Companies)	0	53.794.905	-	0	35.995.253
<b>OTHER SERVICE REVENUES (FEES)</b>	<b>111.558.000</b>	<b>119.855.348</b>	<b>108%</b>	<b>74.645.701</b>	<b>80.264.534</b>
<b>REAL ESTATE REVENUES</b>	<b>79.800.000</b>	<b>125.384.563</b>	<b>157%</b>	<b>53.395.785</b>	<b>83.897.332</b>
Occupancy Revenues	9.000.000	38.244.493	425%	6.022.081	25.590.159
Revenues from housing rental	800.000	806.024	101%	635.296	539.327
Other Real Estate Revenues	70.000.000	86.334.046	123%	46.838.407	57.767.846
<b>INTERESTS</b>	<b>12.094.000</b>	<b>33.297.328</b>	<b>275%</b>	<b>8.082.339</b>	<b>22.279.912</b>
<b>MOVABLE RENTS</b>	<b>70.000.000</b>	<b>76.565.441</b>	<b>109%</b>	<b>46.838.407</b>	<b>51.231.476</b>
<b>FINES</b>	<b>34.237.000</b>	<b>23.101.751</b>	<b>67%</b>	<b>22.908.965</b>	<b>15.457.846</b>
Tax Penalties	2.205.000	1.750.363	79%	1.475.410	1.171.203
Late Charges to be Received from Contractors for Delays	1.000.000	841.274	84%	669.120	429.089
Late Charges to be Received for Tax and Other Public Receivables	5.000.000	2.879.209	58%	3.345.601	1.926.537
Administrative Penalties (Fines)	4.400.000	6.123.071	139%	2.944.128	4.097.070
Vessel Penalties	13.600.000	4.140.094	30%	9.100.033	2.770.220
Other Penalties	8.032.000	7.567.741	94%	5.374.373	5.063.728
<b>MISC. NON-TAX REVENUES</b>	<b>87.155.000</b>	<b>101.044.958</b>	<b>116%</b>	<b>58.317.173</b>	<b>67.611.220</b>
Guarantees to be recorded as Revenue	2.600.000	3.303.667	127%	1.739.712	2.210.550
Specification, Printed Matter, Form, Sales Revenues	3.800.000	543.595	15%	2.408.832	363.730
Revenues from Slum House Fund Nr. 775	70.400.000	73.835.626	105%	47.106.058	49.404.902
Others	9.705.000	15.705.380	162%	6.493.811	10.508.786
Receivable from People	850.000	7.656.699	901%	568.752	5.123.251
<b>SHARES RECEIVED FROM ASSOCIATIONS AND PEOPLE</b>	<b>94.030.000</b>	<b>89.501.095</b>	<b>95%</b>	<b>62.917.364</b>	<b>59.886.982</b>
Investment Contribution Fees for Road Construction	500.000	120.994	24%	334.560	80.959
Contribution Fees for Administrative Expenses	800.000	887.805	111%	535.296	594.048
Shares Received from Museum Entrance Fees	430.000	979.465	228%	287.722	655.380
Shares Transferred from Other Inst. For The Common Infra Services	15.700.000	12.113.034	77%	10.505.186	8.105.075
Car Parking Fee Received from Parking Management	42.000.000	49.384.723	118%	28.103.044	33.044.311
Shares from Bosphorus Bridge Crossings (10%)	28.600.000	23.909.509	84%	19.136.835	15.998.333
Shares from Selling of Treasury Real Estates (10%)	6.000.000	2.105.565	35%	4.014.721	1.408.878
<b>CAPITAL REVENUES</b>	<b>15.480.000</b>	<b>193.186.787</b>	<b>1250%</b>	<b>10.337.906</b>	<b>129.271.173</b>
Sales Revenue of Real Estate	15.250.000	192.498.053	1262%	10.204.082	128.804.318
Sales Revenue of Movables	200.000	697.714	349%	133.824	466.856
<b>RECEIVED GRANTS AND AIDS</b>	<b>31.608.000</b>	<b>24.125.893</b>	<b>76%</b>	<b>21.149.548</b>	<b>16.143.120</b>
Received from European Union (EU)	750.000	1.971.190	263%	501.840	1.318.963
Abolished Aid Done for General Directorate of Rural Services	25.500.000	18.233.346	72%	17.062.563	12.200.299
from Associations and People	2.358.000	2.289.303	97%	1.577.785	1.531.818
Aids for Project	3.000.000	1.632.054	54%	2.007.360	1.092.040
<b>COLLECTIONS FROM RECEIVABLES</b>	<b>-1.935.000</b>	<b>-2.719.836</b>	<b>141%</b>	<b>-1.294.747</b>	<b>-1.819.763</b>
Dismissal and Returns	-1.935.000	-2.719.836	141%	-1.294.747	-1.819.763
<b>GRAND TOTAL (1+2+3+4+5)</b>	<b>4.700.000.000</b>	<b>4.364.684.047</b>	<b>93%</b>	<b>3.144.864.803</b>	<b>2.913.739.743</b>

1 USD = 1,4945 TL  
1 EUR = 1,4406 USD

METROPOLITAN MUNICIPALITY OF ISTANBUL

EXPENDITURE BUDGET & REALIZATION ACCORDING TO ECONOMIC CLASSIFICATION OF 2009

STATEMENT	2009 BUDGET (TL)	31.12.2009 REALIZATION (TL)	RATE OF REAL	2009 BUDGET (USD)	31.12.2009 REALIZATION (USD)
<b>PERSONNEL EXPENDITURES</b>	<b>453.719.148</b>	<b>479.246.083</b>	<b>106%</b>	<b>303.592.604</b>	<b>320.673.190</b>
OFFICERS	121.591.301	128.292.305	104%	81.359.184	84.504.720
CONTRACTUAL PERSONNEL	65.897.203	85.331.398	129%	44.093.144	67.096.946
WORKERS	260.314.000	264.161.419	101%	174.181.332	178.749.026
TEMPORARY PERSONNEL	497.222	662.989	111%	332.701	370.016
OTHER PERSONNEL	5.419.420	2.917.986	54%	3.626.243	1.962.482
<b>SOCIAL SECURITY INSTITUTION PREMIUMS</b>	<b>76.725.794</b>	<b>82.292.438</b>	<b>107%</b>	<b>51.338.771</b>	<b>55.063.525</b>
OFFICERS	15.175.280	15.860.969	103%	10.154.085	10.479.063
CONTRACTUAL PERSONNEL	8.111.572	14.874.587	183%	5.427.816	9.962.585
WORKERS	53.389.440	51.751.791	97%	36.723.948	34.628.164
TEMPORARY PERSONNEL	0	2.607	0%	0	0
OTHER PERSONNEL	49.502	2.495	5%	33.123	1.609
<b>PROCUREMENT OF GOODS AND SERVICES</b>	<b>1.289.201.112</b>	<b>1.137.531.621</b>	<b>88%</b>	<b>862.630.396</b>	<b>781.145.290</b>
PROCUREMENT OF PRODUCTION GOODS AND SERVICE	860.550	114.969	13%	578.811	78.921
PROCUREMENT OF CONSUMPTION ORIENTED G. AND S.	163.921.742	124.377.340	76%	109.863.334	83.223.379
TRAVEL EXPENSES	3.171.717	1.489.827	47%	2.122.260	996.873
DUTY EXPENSES	46.370.810	45.948.054	99%	31.027.841	30.742.788
SERVICES PROCUREMENTS	1.021.305.520	933.774.209	91%	683.376.089	624.807.990
REPRESENTATION AND PROMOTION EXPENSES	17.104.950	14.736.275	86%	11.448.264	9.860.338
MOVABLE GOODS, PURCHASING IMMATERIAL RIGHT, REPAIR	26.526.272	10.489.761	40%	17.749.262	7.018.904
REAL ESTATE MAINTANANCE AND REPAIR	3.817.551	898.489	24%	2.854.400	601.197
THERAPY AND FUNERAL EXPENSES	6.122.000	5.705.716	93%	4.096.353	3.817.809
<b>INTEREST EXPENSES</b>	<b>327.849.502</b>	<b>237.323.042</b>	<b>72%</b>	<b>219.370.694</b>	<b>158.797.619</b>
DOMESTIC DEBT INTEREST EXPENSES	230.100.080	193.742.068	84%	163.964.890	129.836.713
FOREIGN DEBT INTEREST EXPENSES	97.749.422	43.580.974	45%	65.406.104	29.160.906
<b>CURRENT TRANSFERS</b>	<b>392.423.091</b>	<b>338.913.727</b>	<b>86%</b>	<b>262.578.181</b>	<b>226.773.990</b>
LOSSES DUE TO DUTY	14.250.000	7.141.018	50%	9.534.962	4.778.197
TRANSFERS MADE TO NON-PROFIT ORGANIZATIONS	66.535.474	101.149.235	152%	44.520.223	67.880.987
TRANSFERS MADE TO HOUSEHOLD	138.200.000	95.839.590	69%	92.472.399	64.128.197
TRANSFERS MADE TO ABROAD	9.600.000	919.819	10%	401.472	514.800
SHARES FROM REVENUES	172.837.617	133.865.068	77%	115.649.125	89.571.809
<b>CAPITAL EXPENSES</b>	<b>2.860.081.358</b>	<b>3.377.971.692</b>	<b>118%</b>	<b>1.913.737.942</b>	<b>2.260.268.780</b>
PURCHASING FINISHED GOODS	318.711.515	96.379.498	30%	213.256.283	64.689.480
PROPERTY CAPITAL GENERATED EXPENSES	13.498.250	1.814.824	12%	9.031.950	1.080.377
PURCHASING IMMATERIAL RIGHT	42.262.000	17.143.515	41%	28.278.354	11.471.070
PURCHASING REAL ESTATE AND EXPROPRIATION	264.000.000	223.013.429	84%	176.647.706	149.222.769
IMMOVABLE CAPITAL GENERATED EXPENSES	1.617.498.310	2.468.492.479	153%	1.082.300.642	1.681.717.982
MAJOR REPAIR EXPENSES OF MOVABLE GOODS	20.805.000	6.915.140	33%	13.921.044	4.827.089
MAJOR REPAIR EXPENSES OF REAL ESTATE	583.205.280	864.413.007	148%	390.234.379	377.860.092
OTHER CAPITAL EXPENSES	101.000	0	0%	67.581	0
<b>CAPITAL TRANSFERS</b>	<b>160.000.000</b>	<b>455.850.000</b>	<b>285%</b>	<b>107.059.217</b>	<b>304.884.577</b>
DOMESTIC CAPITAL TRANSFERS	160.000.000	455.850.000	285%	107.059.217	304.884.577
<b>LENDING</b>	<b>20.000.000</b>	<b>70.455.018</b>	<b>352%</b>	<b>13.382.402</b>	<b>47.142.868</b>
DOMESTIC LENDING (MUNICIPAL COMPANIES)	20.000.000	70.455.018	352%	13.382.402	47.142.868
<b>CONTINGENCY RESERVE</b>	<b>620.000.000</b>	<b>0</b>	<b>-</b>	<b>414.854.466</b>	<b>0</b>
CONTINGENCY RESERVE	620.000.000	0	-	414.854.466	0
<b>GRAND TOTAL</b>	<b>6.200.000.000</b>	<b>6.179.383.621</b>	<b>100%</b>	<b>4.148.544.664</b>	<b>4.134.749.830</b>

1 USD = 1.4945 TL  
1 EUR = 1.4406 USD

AKTİFLER

I	II	III	AÇIKLAMA	YTL
1			DÖNEN VARLIKLAR	3,787,363,794.21
10			HAZIR DEĞERLER	208,098,978.62
	102		BANKA HESABI	135,901,131.87
	103		VERİLEN ÇEKLER VE GÖNDERME EMİRLERİ (-)	3,561,318.87
	104		PROJE ÖZEL HESABI	59,293,517.49
	105		DÖVİZ HESABI	15,249,603.25
	106		DÖVİZ GÖNDERME EMİRLERİ HESABI	0.00
	109		BANKA KREDİ KARTLARINDAN ALACAKLAR HESABI	1,216,044.88
12			FAALİYET ALACAKLARI	838,444,580.85
	120		GELİRLERDEN ALACAKLAR HESABI	268,331,187.38
	121		GELİRLERDEN TAKİPLİ ALACAKLAR HESABI	569,106,600.55
	122		GELİRLERDEN TECİLLİ VE TEHLİRLİ ALACAKLAR HESABI	505,206.92
	126		VERİLEN DEPOZİTO VE TEMİNATLAR HESABI	501,586.00
14			DİĞER ALACAKLAR	272,361,802.38
	140		KİŞİLERDEN ALACAKLAR HESABI	272,361,802.38
15			STOKLAR	75,766,047.84
	150		İLK MADDE VE MALZEMELER	75,757,267.04
	157		DİĞER STOKLAR HESABI	8,780.80
16			ÖN ÖDEMELER	78,373,691.35
	160		İS AVANS VE KREDİLERİ HESABI	0.00
	161		PERSONEL AVANSLARI HESABI	0.00
	162		BÜTÇE DIŞI AVANS VE KREDİLER HESABI	8,515,972.91
	166		PROJE ÖZEL HESABINDAN VERİLEN AVANS VE AKREDİTİFLER	56,530,386.09
	167		DOĞRUDAN DİS PROJE KREDİ KULLANIMLARI AVANS VE AKRİ	13,327,332.35
19			DİĞER DÖNEN VARLIKLAR	2,314,318.693.17
	190		DEVREDEN KATMA DEĞER VERGİSİ	2,314,318.693.17
	191		İNDİRİLECEK KATMA DEĞER VERGİSİ HESABI	0.00
2			DURAN VARLIKLAR	33,740,980,760.11
22			FAALİYET ALACAKLARI	61,036,313.01
	220		GELİRLERDEN ALACAKLAR HESABI	60,077,629.51
	222		GELİRLERDEN TECİLLİ VE TEHLİRLİ ALACAKLAR HESABI	958,683.50
24			MALİ DURAN VARLIKLAR	2,791,224,253.05
	240		MALİ KURULUŞLARA YATIRILAN SERMAYELER HESABI	697,396,104.12
	241		MAL VE HİZMET ÜRETEN KURULUŞLARA YATIRILAN SERMAYE	2,093,828,148.93
25			MADDİ DURAN VARLIKLAR	30,888,720,194.05
	250		ARAZI VE ARSALAR HESABI	18,678,323,665.71
	251		YERALTI VE YERÜSTÜ DÜZENLERİ HESABI	3,522,296,790.79
	252		BİNALAR HESABI	511,817,700.62
	253		TESİS, MAKİNE VE CİHAZLAR	99,061,456.52
	254		TAŞITLAR GRUBU	546,736,490.43
	255		DEMİRBAŞLAR GRUBU	311,619,336.17
	256		DİĞER MADDİ DURAN VARLIKLAR HESABI	95,950.00
	257		BİRİKİMİS AMORTİSMANLAR HESABI (-)	440,761,807.63
	258		YAPILMAMAKTA OLAN YATIRIMLAR HESABI	7,659,530,611.44
	259		YATIRIM AVANSLARI HESABI	0.00
26			MADDİ OLMAYAN DURAN VARLIKLAR	0.00
	260		HAKLAR HESABI	403,447.19
	268		BİRİKİMİS AMORTİSMANLAR HESABI (-)	403,447.19
29			DİĞER DURAN VARLIKLAR HESABI	0.00
	294		ELDEN ÇIKARILACAK STOKLAR VE MADDİ DURAN VARLIKLAR	0.00
	299		BİRİKİMİS AMORTİSMANLAR HESABI (-)	0.00
			AKTİF TOPLAMI:	37,528,344,554.32

FAALİYET - NAZİM HESAPLAR (BORÇ)

I	II	III	AÇIKLAMA	YTL
6			FAALİYET HESAPLARI	3,123,424,433.47
63			GİDERLER	3,123,424,433.47
	630		GİDERLER HESABI	3,123,424,433.47
8			BÜTÇE HESAPLARI	6,182,103,257.29
	81		BÜTÇE GELİRLERİNDEN RET VE İADELER HESABI	2,719,636.08
	810		BÜTÇE GELİRLERİNDEN RED VE İADELER HESABI	2,719,636.08
	83		BÜTÇE GİDER HESABI	6,179,383,621.21
	830		BÜTÇE GİDERLERİ HESABI	6,179,383,621.21
9			NAZİM HESAPLAR	6,761,083,334.67
	90		ÖDENEK HESAPLARI	20,616,378.79
	900		GÖNDERİLECEK BÜTÇE ÖDENEKLERİ HESABI	20,616,378.79
	91		NAKİT DİSİ TEMİNAT VE KİŞİLERE AIT MENKUL KIYMET HESAPLARI	1,054,072,250.05
	910		TEMİNAT MEKTUPLARI HESABI	1,054,047,250.05
	912		KİŞİLERE AIT MENKUL KIYMETLER HESABI	25,000.00
	92		TAAHHÜT HESAPLARI	2,875,617,745.04
	920		GİDER TAAHHÜTLERİ HESABI	2,875,617,745.04
	93		VERİLEN GARANTİLER HESABI	14,109,493.47
	930		VERİLEN GARANTİLER HESABI	14,109,493.47
	95		DİS BORÇLANMA İLE İLGİLİ NAZİM HESAPLAR	2,796,667,467.32
	950		KULLANILACAK DİS KREDİLER HESABI	2,796,667,467.32

PASİFLER

I	II	III	AÇIKLAMA	YTL
3			KISA VADELİ YABANCI KAYNAKLAR	2,876,593,086.47
30			KISA VADELİ İÇ MALİ BORÇLAR	648,005,077.96
	300		BANKA KREDİLERİ HESABI	648,005,077.96
31			KISA VADELİ DİS MALİ BORÇLAR	118,577,311.23
	310		İÇARİ YILDA ÖDENECEK DİS MALİ BORÇLAR HESABI	118,577,311.23
32			FAALİYET BORÇLARI	1,372,572,779.82
	320		BÜTÇE EMANETLERİ HESABI	1,372,572,779.82
33			EMANET YABANCI KAYNAKLAR	524,851,035.19
	330		ALINAN DEPOZİTO VE TEMİNATLAR HESABI	58,513,207.58
	333		EMANETLER HESABI	466,337,827.61
36			ÖDENECEK VERGİ VE DİĞER YÜKÜMLÜLÜKLER	124,771,059.81
	360		ÖDENECEK VERGİ VE FONLAR HESABI	47,591,721.28
	361		ÖDENECEK SOSYAL GÜVENLİK KESİNTİLERİ HESABI	11,759,080.59
	362		FONLAR VEYA DİĞER KAMU İDARELERİ ADINA YAPILAN TAHSİ	4,328,679.04
	363		KAMU İDARELERİ PAYLARI HESABI	61,091,578.92
38			GELECEK AYLARA AIT GELİRLER VE GİDER TAHAKKUKLARI	89,815,822.46
	381		GİDER TAHAKKUKLARI HESABI	89,815,822.46
39			DİĞER KISA VADELİ YABANCI KAYNAKLAR	0.00
	391		HESAPLANAN KATMA DEĞER VERGİSİ HESABI	0.00
4			UZUN VADELİ YABANCI KAYNAKLAR	2,765,109,513.73
40			UZUN VADELİ İÇ MALİ BORÇLAR	1,076,562,638.20
	400		BANKA KREDİLERİ HESABI	813,881,814.96
	403		KAMU İDARELERİNE MALİ BORÇLAR HESABI	262,680,823.24
41			UZUN VADELİ DİS MALİ BORÇLAR	1,670,557,798.95
	410		DİS MALİ BORÇLAR HESABI	1,670,557,798.95
43			DİĞER BORÇLAR	16,355,260.34
	430		ALINAN DEPOZİTO VE TEMİNATLAR HESABI	16,355,260.34
48			GELECEK YILLARA AIT GELİRLER VE GİDER TAHAKKUKLARI	1,633,816.24
	481		GİDER TAHAKKUKLARI HESABI	1,633,816.24
			300-400 GRUBU TOPLAMI:	5,641,702,600.20
5			ÖZ KAYNAKLAR	31,886,641,954.12
50			NET DEĞER	26,198,808,836.80
	500		NET DEĞER HESABI	26,198,808,836.80
52			YENİDEN DEĞERLEME FARKLARI	23,963,110.98
	522		YENİDEN DEĞERLEME FARKLARI HESABI	23,963,110.98
57			GEÇMİŞ YILLAR OLUMLU FAALİYET SONUÇLARI	4,327,317,528.54
	570		GEÇMİŞ YILLAR OLUMLU FAALİYET SONUÇLARI HESABI	4,327,317,528.54
59			DÖNEM FAALİYET SONUÇLARI	1,336,552,477.80
	590		DÖNEM OLUMLU FAALİYET SONUCU HESABI	1,336,552,477.80
			PASİF TOPLAMI:	37,528,344,554.32

FAALİYET - NAZİM HESAPLAR (ALACAK)

I	II	III	AÇIKLAMA	YTL
6			FAALİYET HESAPLARI	4,459,976,911.27
60			GELİRLER	4,459,976,911.27
	600		GELİRLER HESABI	4,459,976,911.27
8			BÜTÇE HESAPLARI	4,357,303,682.72
	80		BÜTÇE GELİR HESABI	4,357,303,682.72
	800		BÜTÇE GELİRLERİ HESABI	4,357,303,682.72
9			NAZİM HESAPLAR	6,761,083,334.67
	90		ÖDENEK HESAPLARI	20,616,378.79
	901		BÜTÇE ÖDENEKLERİ HESABI	6,200,000,000.00
	905		ÖDENEKLI GİDERLER HESABI	6,179,383,621.21
	91		NAKİT DİSİ TEMİNAT VE KİŞİLERE AIT MENKUL KIYMET HESAPLARI	1,054,072,250.05
	911		TEMİNAT MEKTUPLARI EMANETLERİ HESABI	1,054,047,250.05
	913		KİŞİLERE AIT MENKUL KIYMET EMANETLERİ HESABI	25,000.00
	92		TAAHHÜT HESAPLARI	2,875,617,745.04
	921		GİDER TAAHHÜTLERİ KARŞILIGI HESABI	2,875,617,745.04
	93		VERİLEN GARANTİLER HESABI	14,109,493.47
	931		VERİLEN GARANTİLER KARŞILIGI HESABI	14,109,493.47
	95		DİS BORÇLANMA İLE İLGİLİ NAZİM HESAPLAR	2,796,667,467.32
	951		KREDİ ANLAMALARI HESABI	2,796,667,467.32

**ANNEX 3**



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

**NATIONALITY, SOURCE, AND ORIGIN REQUIREMENTS**

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

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

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

**NATIONALITY:**

1) Rule

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

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

## 2) Application

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

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

## 3) Definitions

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

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

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

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

## **SOURCE AND ORIGIN:**

### 1) Rule

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

### 2) Application

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

### 3) Definitions

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

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

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

**ANNEX 4**

## GRANT AGREEMENT

This Grant Agreement is entered into between the Government of the United States of America, acting through the U.S. Trade and Development Agency ("USTDA") and İSTAC A.Ş. Istanbul Environmental Management Industry and Trading Company (İSTAC) ("Grantee"). USTDA agrees to provide the Grantee under the terms of this Agreement US \$491,160 ("USTDA Grant") to fund the cost of goods and services required for a feasibility study ("Study") on the proposed İSTAC Waste-to-Energy Plant Feasibility Study ("Project") in Turkey ("Host Country").

### 1. USTDA Funding

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

### 2. Terms of Reference

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

### 3. Standards of Conduct

USTDA and the Grantee recognize the existence of standards of conduct for public officials, and commercial entities, in their respective countries. The parties to this Grant Agreement and the Contractor shall observe these standards, which include not accepting payment of money or anything of value, directly or indirectly, from any person for the purpose of illegally or improperly inducing anyone to take any action favorable to any party in connection with the Study.

### 4. Grantee Responsibilities

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

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

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

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

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

**(E) Grant Agreement Controlling**

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

**6. Disbursement Procedures**

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

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

**(B) Contractor Invoice Requirements**

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

**7. Effective Date**

The effective date of this Grant Agreement ("Effective Date") shall be the date of signature by both parties or, if the parties sign on different dates, the date of the last signature.

**8. Study Schedule**

**(A) Study Completion Date**

The completion date for the Study, which is August 31, 2011 is the date by which the parties estimate that the Study will have been completed.

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

Except as USTDA may otherwise agree, (a) no USTDA funds may be disbursed under this Grant Agreement for goods and services which are provided prior to the Effective Date of the Grant Agreement; and (b) all funds made available under the Grant Agreement must be disbursed within four (4) years from the Effective Date of the Grant Agreement.

## **9. USTDA Mandatory Clauses**

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

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

### **(A) Air**

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

### **(B) Marine**

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

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

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

## **12. Taxes**

USTDA funds provided under the Grant Agreement shall not be used to pay any taxes, tariffs, duties, fees or other levies imposed under laws in effect in Host Country. Neither the Grantee nor the Contractor will seek reimbursement from USTDA for such taxes, tariffs, duties, fees or other levies.

### **13. Cooperation Between Parties and Follow-Up**

The parties will cooperate to assure that the purposes of the Grant Agreement are accomplished. For five (5) years following receipt by USTDA of the Final Report (as defined in Clause I of Annex II), the Grantee agrees to respond to any reasonable inquiries from USTDA about the status of the Project.

### **14. Implementation Letters**

To assist the Grantee in the implementation of the Study, USTDA may, from time to time, issue implementation letters that will provide additional information about matters covered by the Grant Agreement. The parties may also use jointly agreed upon implementation letters to confirm and record their mutual understanding of matters covered by the Grant Agreement.

### **15. Recordkeeping and Audit**

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

### **16. Representation of Parties**

For all purposes relevant to the Grant Agreement, the Government of the United States of America will be represented by the U. S. Ambassador to Host Country or USTDA and Grantee will be represented by the General Manager of ISTAC. 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: Osman Akgul  
General Manager  
İSTAÇ A.Ş. Istanbul Environmental Management Industry and Trading Company  
Paşa Mah. Piyalepaşa Bulvarı No: 74 Şişli/ İSTANBUL  
Turkey

Phone: +90 212-230-60-41

Fax: +90 212-231-76-14

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

Phone: (703) 875-4357

Fax: (703) 875-4009

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

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

Appropriation No.: 11 10/11 1001

Activity No.: 2010-81023A

Reservation No.: 2010-810026

Grant No.: GH2010810007

#### **18. Termination Clause**

Either party may terminate the Grant Agreement by giving the other party thirty (30) days advance written notice. The termination of the Grant Agreement will end any obligations of the parties to provide financial or other resources for the Study, except for payments which they are committed to make pursuant to noncancellable commitments entered into with third parties prior to the written notice of termination.

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

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

**20. U.S. Technology and Equipment**

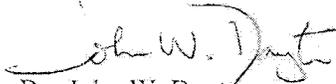
By funding this Study, USTDA seeks to promote the project objectives of the Host Country through the use of U.S. technology, goods, and services. In recognition of this purpose, the Grantee agrees that it will allow U.S. suppliers to compete in the procurement of technology, goods and services needed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

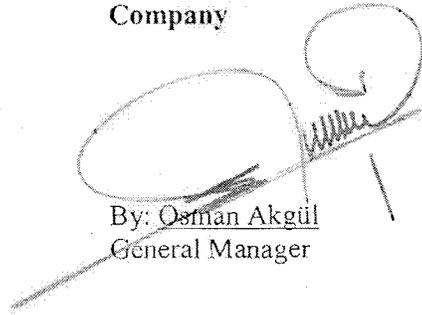
**[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK]**

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

For the Government of the  
United States of America

For İSTAÇ A.Ş. Istanbul Environmental  
Management Industry and Trading  
Company

  
By: John W. Dayton  
Consul General, Acting

  
By: Osman Akgül  
General Manager

Date: August 23, 2010

Date: August 23, 2010

Witnessed:

  
By: Gregory S. Taevs  
Commercial Attaché

Witnessed:

  
By: Senol Yıldız  
Project & Research Manager

Annex I -- Terms of Reference

Annex II -- USTDA Mandatory Clauses

## Annex I

### Terms of Reference

#### İSTAÇ WASTE-TO-ENERGY PLANT FEASIBILITY STUDY

##### **Purpose and Objectives of the Study**

The purpose of this FS is to evaluate the technical, economic, and financial feasibility of developing a waste-to-energy (WTE) facility for İSTAÇ in Istanbul, Turkey.

The Contractor shall complete the following tasks:

##### **Task 1: Condition Assessment at Site and Final Sizing of the WTE Facility**

The Contractor shall travel to Istanbul, Turkey for a kick-off meeting with İSTAÇ and to inspect the Odayeri and Kömürcüoda landfill sites. As a part of the condition assessment, the Contractor shall determine the long term availability of high calorie MSW at the project sites. For the final sizing of the boilers, availability of municipal solid waste (MSW) only with lower heating value (LHV) of 6,500 kJ/kg or higher should be considered. The fuel supply assessment should be based on a minimum plant life of 20 years. If necessary, the Contractor shall determine the best method to enhance the heating value of the MSW for reliable, self-sustaining operation of the WTE plant. In sizing of the facility, the future (projected) MSW generation rates should be taken into consideration. The contractor shall also evaluate the boiler options, (i.e., direct incineration to steam generation versus MSW gasification to steam generation; 4x750 ton/day versus 3x920 ton/day) and the cogeneration potential (whether to generate both heat and electricity) to optimize the energy yield. Consequently, the Contractor shall prepare Heat and Mass Balances for the proposed WTE thermal cycle.

Deliverable: Upon completion of Task 1, the Contractor shall issue Milestone Report 1 to the Grantee, covering work performed under Task 1.

##### **Task 2: Preliminary Design of the WTE Facility**

Based on the information gathered in Task 1, the Contractor shall proceed with the preliminary design of the WTE facility. This will be a conceptual design, detailed enough to produce a reasonably accurate Engineering, Procurement and Construction (EPC) cost estimate and project schedule. At a minimum, the preliminary design shall include;

- Plant lay-out
- Optimum Heat and Mass Balance indicating best plant performance
- Major equipment list
- Process flow diagrams

- Electrical one line diagram

Deliverable: Upon completion of Task 2, the Contractor shall issue Milestone Report 2 to the Grantee, covering work performed under Task 2.

### **Task 3: Environmental and Developmental Impact Assessment**

The Contractor shall prepare a preliminary Environmental Impact Assessment (EIA) based on the WTE technology chosen. In the EIA, the Contractor shall identify, and propose remedies for any potential air, water, or noise pollution increases that are likely result from the Project. The chief objective of this task is to ensure that the proposed Project will comply with the European Union's environmental criteria, the World Bank emissions criteria and the Kyoto Protocol Annex I. The Contractor shall also provide a potential Developmental Impact Assessment (DIA) outlining the economic and social developmental outcomes of the projects and how the host country will benefit in the long term from the implementation of the project. For the DIA, the Contractor shall address the following;

- **Infrastructure:** A summary of the foreseeable impacts on infrastructure with justifications,
- **Market-Oriented Reforms:** A brief description of regulatory or institutional changes the project might lead to,
- **Human Capacity Building:** A description of the number and type of jobs that would be created to construct, procure for and operate the plant, including the subcontracted and outsourced positions. A brief description of the training program(s) required to prepare/qualify the candidates for these positions,
- **Technology Transfer and Spin-Off Effects:** A description of any advanced technologies that will be implemented in the host country for the first time as a part of the project. A brief evaluation of the project as a technology demonstrator to other users in the host country.

Deliverable: Upon completion of Task 3, the Contractor shall issue Milestone Report 3 to the Grantee, covering work performed under Task 3.

### **Task 4: Detailed Cost Estimate and Implementation Schedule**

Having chosen the most suitable WTE technology and produced the plant-lay out and the major equipment list in Task 1, the Contractor shall prepare an EPC cost estimate. FS Contractor's estimate should include a detailed breakdown of equipment and materials for all major components, including but not limited to the water treatment system, boilers, large bore and high pressure steam piping, steam turbine, condenser, mechanical and electrical balance of plant, instrumentation and controls, and electrical interconnection. The cost of land acquisition and cost of financing should be determined and added to the cost estimate at this stage. For the EPC implementation schedule, the FS Contractor is

encouraged use generally accepted project management software such as Microsoft Project or Primavera.

Deliverable: Upon completion of Task 4, the Contractor shall issue Milestone Report 4 to the Grantee, covering work performed under Task 4.

#### **Task 5: Plant Economic Analysis**

Even though project profitability is not the main objective of this potential investment, for the WTE technology chosen the Contractor shall conduct a plant economic analysis based on current and future (i.e. expected) parameters such as the tipping fees, electricity tariff rates, interest rates and financing costs. The Contractor shall calculate net present value, payback period, and internal rate of return for the alternative scenarios.

Deliverable: Upon completion of Task 6, the Contractor shall issue Milestone Report 6 to the Grantee, covering work performed under Task 5.

#### **Task 6: Legal Framework Review**

In this task, the Contractor shall review the pertinent regulatory and legal framework to reflect the latest developments in the Renewable Energy and MSW related laws of Turkey. European Union compliance, permitting and licensing requirements with the Ministry of Energy, local building codes, local right-of-way, and zoning ordinances should be taken into account before the Project moves into the EPC stage. Any problematic or lengthy permitting and licensing issues need to be identified at this stage.

Deliverable: Upon completion of Task 6, the Contractor shall issue Milestone Report 6 to the Grantee, covering work performed under Task 6.

#### **Task 7: Financing Options Review**

The Contractor shall follow up with the Financial Institutions that have been already contacted during the Definitional Mission and/or develop his own financing strategies. These financial institutions are; International Finance Corporation, Turkish Industrial Development Bank and the European Bank for Reconstruction and Development. It is the FS Contractor's responsibility to obtain Letters of Interest (LOI) from potential lender(s). For syndicated loans, all lending institutions and their portions in the portfolio should be identified. The current terms and conditions for each of the potential sources of funding need to be clearly stated in the LOIs.

Deliverable: Upon completion of Task 7, the Contractor shall issue Milestone Report 7 to the Grantee, covering work performed under Task 7.

### **Task 8: EPC Tender Documents Preparation**

As a stand-alone EPC Tender Document, the Contractor shall prepare a set of bidding specifications for İSTAC to solicit EPC Bids from interested parties. The EPC Tender Documents shall include but not be limited to: (a) Project Definition, (b) Technical Specifications based on the Preliminary Design and Environmental Impact Assessment, and (c) Draft Commercial Terms and Conditions of the EPC Contract.

Technical Specifications should be divided into sections covering;

(a) Major Mechanical, Electrical and I&C Equipment, (b) Civil Works and Construction, (b) Plant Narrative (i.e. Design Basis), (d) Plant Performance Requirements (e) Start-up and Commissioning, and (f) Project Implementation Schedule

The Draft Commercial Terms and Conditions should include the Penalties and Liquidated Damages which would apply in case of non-compliance with the Performance and Schedule requirements.

Deliverable: Upon completion of Task 8, the Contractor shall issue Milestone Report 8 to the Grantee, covering work performed under Task 8.

### **Task 9: 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.

Notes:

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

## Annex II

### USTDA Mandatory Contract Clauses

#### A. USTDA Mandatory Clauses Controlling

The parties to this contract acknowledge that this contract is funded in whole or in part by the U.S. Trade and Development Agency ("USTDA") under the Grant Agreement between the Government of the United States of America acting through USTDA and İSTAÇ A.Ş. Istanbul Environmental Management Industry and Trading Company (İSTAÇ) ("Client"), dated \_\_\_\_\_ ("Grant Agreement"). The Client has selected \_\_\_\_\_ ("Contractor") to perform the feasibility study ("Study") for the İSTAÇ Waste-to-Energy Plant Feasibility Study project ("Project") in Turkey ("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 there under. 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, 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 August 31, 2011 is the date by which the parties estimate that the Study will have been completed.

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

Except as USTDA may otherwise agree, (a) no USTDA funds may be disbursed under this contract for goods and services which are provided prior to the Effective Date of the Grant Agreement; and (b) all funds made available under the Grant Agreement must be disbursed within four (4) years from the Effective Date of the Grant Agreement.

### **L. Business Practices**

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

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

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

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

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

#### Fiscal Data:

Appropriation No.: 11 10/11 1001  
Activity No.: 2010-81023A  
Reservation No.: 2010-810026  
Grant No.: GH2010810007

### **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.



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 .

**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: \_\_\_\_\_