

REQUEST FOR PROPOSALS

TECHNICAL ASSISTANCE FOR THE

**NEW GUANDU WATER TREATMENT PLANT
VALUE ENGINEERING REVIEW**

Submission Deadline: **4:00 PM LOCAL TIME**
RIO DE JANEIRO, BRAZIL
APRIL 13, 2015

Submission Place: Gustavo Tannure
Companhia Estadual de Águas e Esgotos (CEDAE)
Avenida Presidente Vargas, 2655
Rio de Janeiro, RJ Brazil 20210-030
Tel: 55-21-2332-3228

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.

**N.B.: Any and all questions pertaining to the RFP should be sent to:
RFPQuestions@ustda.gov**

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Section 1: INTRODUCTION

The U.S. Trade and Development Agency (USTDA) has provided a grant in the amount of US\$199,760 to Companhia Estadual de Águas e Esgotos, CEDAE (the “Grantee”) in accordance with a grant agreement dated December 22, 2014 (the “Grant Agreement”). The objective of this technical assistance is to review an existing preliminary design for a major water treatment facility in Rio de Janeiro, Brazil (the “Host Country”) to determine the applicability of more efficient and cost effective U.S. technologies. 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 Technical Assistance.

1.1 BACKGROUND SUMMARY

The Companhia Estadual de Águas e Esgotos (CEDAE) is the primary water supplier and wastewater collection and treatment company in Rio de Janeiro, Brazil. CEDAE’s water division operates and maintains over 75 water treatment plants (WTPs) including the Guandu WTP, which is the largest in the world. Due to the growth of the Rio de Janeiro service area, the Guandu WTP needs to be expanded, and CEDAE is planning to construct a New Guandu WTP which will have a design capacity of over 548 million gallons per day (MGD), constructed in two phases of 274 MGD each. The New Guandu WTP project will benefit about nine million people in 12 cities inside the Rio de Janeiro metropolitan area.

CEDAE and its design contractor, Aquacon Engenharia from Rio de Janeiro, recently completed a Base Phase 1 Study that includes preliminary designs, support calculations, a number of preliminary plans, and an estimate of the number of pumps, unit operations, etc. to be included in the design of the New Guandu WTP. However, CEDAE senior management would like more advanced state-of-the-art technology to be appropriately considered for inclusion in the Base Phase 1 Study, and they have requested a thorough process review of the report.

The U.S. contractor will conduct a Value Engineering Review to assess the existing design report and make recommendations to CEDAE for U.S.-sourced technologies and equipment that could improve the new water treatment plant’s overall cost-effectiveness and efficiency. Specifically, the Value Engineering Review will evaluate the recommendations provided in the existing preliminary design study, conduct analysis on the base flow and load characteristics for the new facility, complete detailed technical analysis of major systems, and determine alternative state-of-the-art systems and technologies. The objective of this analysis is to produce a comprehensive list of U.S. sources of supply that CEDAE can consider in its development process.

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

1.2 OBJECTIVE

The objective of this technical assistance is to review an existing preliminary design for a major water treatment facility in Rio de Janeiro, Brazil to determine the applicability of more efficient and cost effective U.S. technologies. The Terms of Reference (TOR) for this Technical Assistance are attached as Annex 5.

1.3 PROPOSALS TO BE SUBMITTED

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

The amount for the contract has been established by a USTDA grant of US\$199,760. **The USTDA grant of \$US 199,760 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\$199,760 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 New Guandu Water Treatment Plant Value Engineering Review.

2.2 DEFINITIONS

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

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

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

2.3 DEFINITIONAL MISSION REPORT

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

2.4 EXAMINATION OF DOCUMENTS

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

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 Technical Assistance.

2.5 PROJECT FUNDING SOURCE

The Technical Assistance will be funded under a grant from USTDA. The total amount of the grant is not to exceed US\$199,760.

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 in Portuguese. Offerors should submit one copy in English, one copy in Portuguese, and an electronic copy of both versions on a flash drive. Annex VI does not need to be translated into Portuguese.

2.13 PROPOSAL SUBMISSION REQUIREMENTS

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

Gustavo Tannure
Companhia Estadual de Águas e Esgotos (CEDAE)
Avenida Presidente Vargas, 2655
Rio de Janeiro, RJ Brazil 20210-030
Tel: 55-21-2332-3228

An English and Portuguese version of your proposal, as well as an electronic copy on a flash drive, must be received at the above address no later than 4:00pm on April 13, 2015.

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

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

2.14 PACKAGING

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

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

2.15 OFFEROR'S AUTHORIZED NEGOTIATOR

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

2.16 AUTHORIZED SIGNATURE

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

2.17 EFFECTIVE PERIOD OF PROPOSAL

The proposal shall be binding upon the Offeror for ninety (90) days after the proposal due date, and Offeror may withdraw or modify this proposal at any time prior to the due date upon written request, signed in the same manner and by the same person who signed the original proposal.

2.18 EXCEPTIONS

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

2.19 OFFEROR QUALIFICATIONS

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

2.20 RIGHT TO REJECT PROPOSALS

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

2.21 PRIME CONTRACTOR RESPONSIBILITY

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

2.22 AWARD

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

2.23 COMPLETE SERVICES

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

2.24 INVOICING AND PAYMENT

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

Section 3: PROPOSAL FORMAT AND CONTENT

To expedite proposal review and evaluation, and to 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\$199,760, which is a fixed amount.

Offerors shall submit one (1) English and one (1) Portuguese version of the proposal as well as an electronic copy of both versions on a flash drive. Proposals received by fax cannot be accepted.

Each proposal must include the following:

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

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

3.1 EXECUTIVE SUMMARY

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

3.2 U.S. FIRM INFORMATION

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

3.3 ORGANIZATIONAL STRUCTURE, MANAGEMENT, AND KEY PERSONNEL

Describe the Offeror's proposed project organizational structure. Discuss how the project will be managed including the principal and key staff assignments for this Technical Assistance. 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 Technical Assistance.

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 Technical Assistance.

3.5 EXPERIENCE AND QUALIFICATIONS

Provide a discussion of the Offeror's experience and qualifications that are relevant to the objectives and TOR for the Technical Assistance. If a subcontractor(s) is being used, similar

information must be provided for the prime and each subcontractor firm proposed for the project. The Offeror shall provide information with respect to relevant experience and qualifications of key staff proposed. The Offeror shall include letters of commitment from the individuals proposed confirming their availability for contract performance.

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

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

Offerors are strongly encouraged to include in their experience summary primarily those projects that are similar to the Technical Assistance 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:

(1) U.S. Firm's Expertise and Relevant Experience (25 Points)

U.S. Firm's demonstrated professional experience in the water treatment sector with specific reference to design work for successful large scale water treatment infrastructure projects; demonstrated experience in water treatment plant modernization and upgrades; familiarity with U.S.-manufactured water treatment technology and equipment and U.S. suppliers; demonstrated experience in economic, financial, environmental, and regulatory analysis for large-scale water treatment plants.

(2) U.S. Firm's Work Plan and Approach (20 Points)

U.S. Firm's proposed work plan and approach to the planning, organization, and implementation of technical assistance to CEDAE and in particular how the U.S. Firm

would apply its competencies to conduct the Value Engineering Review. Demonstration and understanding of, and responsiveness to, program objectives and soundness of approach; overall innovative nature of proposed activities and approach to measure, monitor, and evaluate performance and impact; and soundness of approach and methodology.

(3) Availability of Qualified Personnel (25 Points)

Demonstrated qualifications and abilities of each of the key personnel proposed by the U.S. Firm in terms of the requirements of this Contract. Definition of the specific roles and responsibilities of key personnel. Effective management, use, and deployment of technical resources.

At a minimum, the proposed personnel is expected to consist of a project manager, a water treatment process engineer, a water treatment mechanical engineer, and an electrical engineer with experience in energy efficiency and power generation in the water industry.

(4) Past Performance (20 Points)

The quality of the U.S. Firm's past performance will be used to assess the credibility of the U.S. Firm's proposal for performance of the work specified in this solicitation. In evaluating a U.S. Firm's past performance, it will be relevant whether the U.S. Firm has consistently provided customers and clients with quality services on time and has demonstrated success in achieving results in the areas described in the program description.

(5) Firm's Relevant Experience in Brazil or Similar Markets (10 Points)

U.S. Firm's experience in and knowledge of the Brazilian water sector or similar markets and its specific relevance to the work that will be required under this Contract.

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

Price will not be a factor in contractor selection.

A N N E X 1

FEDBIZOPPS ANNOUNCEMENT

Gustavo Tannure
Companhia Estadual de Águas e Esgotos (CEDAE)
Avenida Presidente Vargas, 2655
Rio de Janeiro, RJ Brazil 20210-030
Tel: 55-21-2332-3228

USTDA Activity Number 2015-51002A, New Guandu Water Treatment Plant Value Engineering Review

POC: Jennifer Van Renterghem, USTDA, 1000 Wilson Boulevard, Suite 1600, Arlington, VA 22209-3901, Tel: (703) 875-4357, Fax: (703) 875-4009, Email: RFPQuestions@ustda.gov.

New Guandu Water Treatment Plant Value Engineering Review

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 provide technical assistance to the Companhia Estadual de Águas e Esgotos (CEDAE) (Grantee) and review an existing preliminary design for a major water treatment facility.

CEDAE is the primary water supplier and wastewater collection and treatment company in Rio de Janeiro, Brazil. CEDAE's water division operates and maintains over 75 water treatment plants (WTPs) including the Guandu WTP, which is the largest in the world. Due to the growth of the Rio de Janeiro service area, the Guandu WTP needs to be expanded, and CEDAE is planning to construct a New Guandu WTP which will have a design capacity of over 548 million gallons per day (MGD), constructed in two phases of 274 MGD each. The New Guandu WTP project will benefit about nine million people in 12 cities inside the Rio de Janeiro metropolitan area.

CEDAE has recently completed a Base Phase 1 Study that includes preliminary designs, support calculations, a number of preliminary plans, and an estimate of the number of pumps, unit operations, etc. to be included in the design of the New Guandu WTP. However, CEDAE senior management would like more advanced state-of-the-art technology to be appropriately considered for inclusion in the Base Phase 1 Study, and they have requested a thorough process review of the report.

The U.S. firm will conduct a Value Engineering Review to assess the existing design report and make recommendations to CEDAE for U.S.-sourced technologies and equipment that could improve the new water treatment plant's overall cost-effectiveness and efficiency. Specifically, the Value Engineering Review will evaluate the recommendations provided in the existing preliminary design study, conduct analysis on the base flow and load characteristics for the new facility, complete detailed technical analysis of major systems, and determine alternative state-of-the-art systems and technologies. The objective of this analysis is to produce a comprehensive list of U.S. sources of supply that CEDAE can consider in its development process.

The U.S. firm selected will be paid in U.S. dollars from a \$199,760 grant to the Grantee from the U.S. Trade and Development Agency (USTDA).

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

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

Interested U.S. firms should submit their Proposal in English and in Portuguese. Offerors should submit one copy in English, one copy in Portuguese, and an electronic copy of both versions on a flash drive directly to the Grantee by 4pm, April 13, 2015 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.

A N N E X 2

PORTIONS OF BACKGROUND DEFINITIONAL MISSION REPORT

Federative Republic of Brazil

**WATER AND WASTEWATER UTILITY ENERGY EFFICIENCY AND POWER
GENERATION**

Definitional Mission Preliminary Draft Report

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1

EXECUTIVE SUMMARY

The United States Trade and Development Agency (USTDA) has determined that the implementation of energy-related water sector projects in the Federative Republic of Brazil (Brazil) may provide business opportunities for U.S. companies who are able to provide the services, equipment and technologies for those projects. As a result, USTDA sponsored a Brazil Water Sector Reverse Trade Mission (RTM) from May 11 to May 21, 2014 that was intended to allow representatives of a number of Brazilian water sector utilities to meet with prospective U.S. equipment and service suppliers. The RTM also provided an opportunity for representatives of the participating utilities to visit water and wastewater treatment facilities in several U.S. locations that utilize various advanced technologies that may be applicable to existing water and energy situations in Brazil.

To further investigate U.S. export opportunities in Brazil, USTDA then commissioned a Definitional Mission (DM) to evaluate whether it is in USTDA's best interests to provide funding support for any of the water supply and wastewater management projects proposed by the RTM participants. Performance Technology Inc. (PerformTech) was selected to undertake the DM on behalf of USTDA. As an integral part of the DM, a PerformTech field team traveled to Brazil from July 14 to August 5, 2014 to meet with potential project sponsors and other private and public stakeholders who may have a technical, financial or regulatory role in implementing the projects that USTDA may support.

PerformTech is recommending that USTDA support this activity:

1. **CEDAE Value Engineering Study** - PerformTech recommends that USTDA consider funding for a proposed Value Engineering Study that will seek to review an existing preliminary design for a major water treatment facility to determine the applicability of more efficient and cost effective U.S. advanced technologies. The anticipated cost of the study is US\$ 199,760. Companhia Estadual de Aguas e Esgotos (CEDAE) will serve as the project sponsor for USTDA grant purposes. Export potential associated with the technical systems that could be upgraded within CEDAE's New Guandu treatment facility design is approximately US\$ 84 million.

2

DEFINITIONAL MISSION BACKGROUND AND SETTING

2.1 Introduction

The United States Trade and Development Agency (USTDA) has determined that the implementation of energy-related water sector projects in the Federative Republic of Brazil (Brazil) may provide business opportunities for U.S. companies who are able to provide the services, equipment and technologies for those projects. As a result, USTDA sponsored a Brazil Water Sector Reverse Trade Mission (RTM) that allowed representatives of a number of Brazilian water sector utilities to meet with prospective U.S. equipment and service suppliers. The RTM also provided opportunities for the Brazilian participants to

visit water and wastewater treatment facilities in several U.S. locations that utilize various advanced technologies that may be applicable to existing water and energy situations in Brazil. This RTM occurred from May 11 to May 21, 2014 and included presentations and roundtable discussions with representatives of U.S. companies, financial institutions and regulators. The RTM also included an opportunity for the Brazilian utility representatives to present their priority projects to USTDA and the participating U.S. service and technology suppliers.

To further investigate export opportunities in Brazil, USTDA then commissioned a Definitional Mission (DM) to evaluate whether it is in USTDA's best interests to provide funding support for any of the water supply and wastewater management projects proposed by the RTM participants. Performance Technology Inc. (PerformTech) was selected to undertake the DM on behalf of USTDA. As an integral part of the DM, a PerformTech field team traveled to Brazil from July 14 to August 5, 2014 to meet with project sponsors and other private and public stakeholders who may have a technical, financial or regulatory role in implementing any of the projects that USTDA may support. Meetings with the water sector utilities were intended to review their project proposals and gather relevant information that would allow PerformTech to evaluate the technical, institutional and financial characteristics of the proposed projects. During the DM field work, PerformTech's technical team was able to work with project proponents to reformulate their project proposals so that they would better fit USTDA criteria for funding support.

The intent of the DM evaluation was to determine whether the projects proposed by the targeted Brazilian utilities are a high priority in Brazil and that they meet the basic USTDA funding objectives of supporting U.S. exports. The DM was also intended to define existing development conditions in Brazil that affect the prospects and implementation process and timing for the proposed projects. This report presents the result of the DM fieldwork and subsequent project evaluations.

2.2 The Brazilian Economy

The Federative Republic of Brazil is the 7th largest economy in the world (and Latin America's largest) and is the fifth largest country in the world in terms of land mass and population (with a population of about 197 million people). By 2020, Brazil is projected to be the 5th largest consumer market in the world, ahead of France and the United Kingdom. Currently, Brazil is viewed as a highly competitive and industrialized country often compared to the developed world. The historical economic and demographic transformation of Brazil has resulted in a high and rapid level of urbanization such that, by 2010, Brazil's municipalities accounted for about 87% of the country's population. While the population growth of Brazil's largest cities has leveled off in recent years, the country's smaller cities have continued to grow and gain population. Generally, all of Brazil's urban area institutions have been struggling to provide sufficient and effective public services including those related to water supply and wastewater management. This creates a situation where many Brazilian water sector utilities are faced with the need to improve their overall efficiencies and effectiveness as well as increase their service coverage to accommodate growing populations in expanding urban and metropolitan areas. The need to expand service coverage particularly relates to locales populated by Brazil's urban poor. This has created a significant social driver for the expansion of water sector services. In turn, this becomes one of the factors why the targeted utilities are seeking to increase their effectiveness by enhancing their energy-related situations and reducing the overall costs of operations.

In recent decades, Brazil has improved its macroeconomic stability through significant growth in the country's agricultural, mining, manufacturing, and services sectors. Foreign investors have been attracted to Brazil because of its strong historical economic growth and high interest rates. During the

past decade, the country has adopted policies that sought to control inflation and promote economic growth. Currently, there is a high level of urban infrastructure development activity that was stimulated by Brazil’s hosting of the 2014 FIFA World Cup and the upcoming 2016 Olympics in Rio de Janeiro. As a result, the government of Brazil has allocated about US\$32 billion to economic packages aimed at infrastructure development which includes the water sector. This investment has stimulated water sector utilities to seek the means for enhancing their existing services and expand to meet future service requirements.

2.3 United States Water Sector Export Potential to Brazil

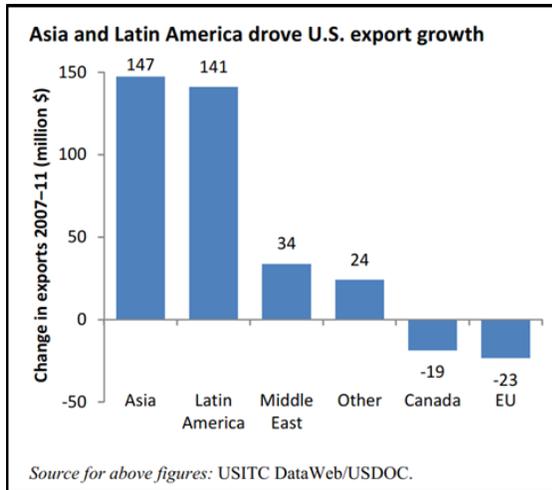


Figure 1 - Change in U.S. Exports from 2007 to 2011

The United States is one of the leading global exporters of water and wastewater treatment equipment with an estimated \$1.8 billion in equipment and parts exported in 2011. The U.S. trade surplus was \$548 million in 2011 and U.S. exports were about 17% of global exports of water sector equipment (excluding parts). U.S. exports to Latin America rose by 75% during the time period between 2007 and 2011 with Mexico and Chile accounting for the largest share of this increase. Overall, the Latin American region has a significant share of U.S. exports as shown in Figure 1 which presents the U.S. global export distribution for the period from 2007 to 2011. Historical export rates to the Latin American region help to support the prospects of increasing energy related water sector technologies and services exports to the region.

Further, the overall water and wastewater market size in Brazil is significant. Figure 2 shows a comparison of Brazilian water sector market size to that of other countries including those in Latin America.

However, the emerging economic strength of Brazil and government actions to support local suppliers will likely influence the prospects and impediments to importing U.S. technologies and services into Brazil. This is a factor that will need to be closely investigated in any consultancies that may be supported by USTDA funding.

In 2012, the U.S. was Brazil’s second largest source of imports with 14.6% of total worldwide imports behind China and followed by Argentina, Germany, and South Korea. During that year, U.S. merchandise exports to Brazil totaled \$43.7 billion which was up 1.8% from 2011. During the same period, U.S. imports from Brazil were \$32.1 billion which was up 1.1% from 2011. The U.S. continues to enjoy a positive trade balance relationship with Brazil. In addition, the U.S. Foreign Commercial Service reports that there is an increasing demand for effluent treatment and energy/water saving technologies in Brazil, as well as for the specialized consulting services associated with these technologies. The projects evaluated during this DM can help to fulfill a segment of that demand.

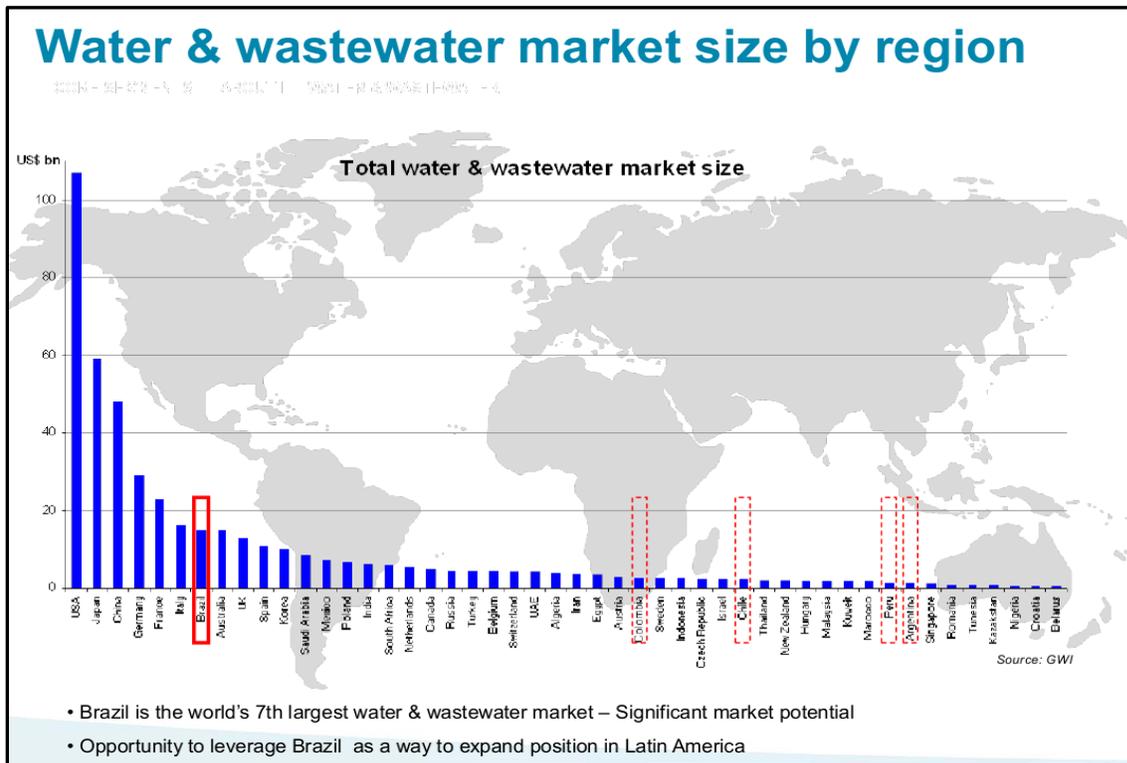


Figure 2 - Regional Water Sector Market Size

Figure 3 presents a general characterization of the Brazilian water and wastewater treatment market and also identifies some of the companies that U.S. suppliers will need to compete against for water sector work in Brazil.

Water and Wastewater Treatment Equipment Market: Key Market Measurements (Brazil), 2010 and 2015										
Market Measurement	Industrial Water		Industrial Waste Water		Municipal Water		Municipal Waste Water		Total Market	
Total Revenues (\$ Million)	2010	2015	2010	2015	2010	2015	2010	2015	2010	2015
	213.4	287.8	317.4	497.3	70.4	91.7	94	167.8	695.2	1044.6
Top End-user Segments	Oil and gas, petrochemicals, mining, pulp and paper				Small and medium sized agglomerations and nutrient sensitive areas					
Degree of Competition	High		High		Medium		Medium		Medium-High	
Top Market Participants	Enfil, Centropjekt, Veolia Water Solutions and Technologies Haztec, Dedini Engineering (Paques), Siemens Water Technologies; Degremont; Tecotec; Perenne									
CAGR: 2010-2015 (%)	6.2		9.4		5.4		12.3		8.5	

Note: All figures are rounded; the base year is 2010. Source: Frost & Sullivan

Figure 3 - Estimated Brazilian Water Sector Market Value

2.4 Current Water Sector Conditions in Brazil

There are about 35 million cubic kilometers of fresh water on the earth. However, about 70% of this fresh water is captured in Arctic and Antarctic ice and snow or as permanent snow cover in mountainous regions. Globally, water demand is increasing as the worldwide population continues to grow with water use expanding at more than twice the rate of population growth. Urbanization is a major factor in future water demand projections. By 2030, the World Health Organization estimates that 60% of the world's population will live in cities. Currently, nearly all of the world's megacities are already facing water stress conditions that place significant pressure on water sector service providers (including utility service providers in Brazil) to increase their access to water, increase their overall service delivery efficiency and prevent water contamination through the effective management of wastewater.

Brazil has extensive water resources with approximately 12% of worldwide available freshwater resources. However, while general water availability in Brazil is high, the arid northeastern region of the country has only 3% of the country's water resources, but almost 30% of the population. Water stressed regions also exist in the south of Brazil which also has a large proportion of Brazil's urban population. Recent and periodic drought conditions have created situations where municipalities in Brazil were required to ration water and drought situations influence energy availability for operation of water and wastewater treatment facilities because of the strong dependency on hydropower generation sources. This was a situation faced by a number of Brazilian municipalities in 2014.

Brazil has a well-developed water sector where water supply and wastewater management functions are available for most of Brazil's population and commercial/industrial entities. Currently, it is estimated that over 98% of Brazil's population has access to an effective water supply while 79% has access to effective wastewater collection and treatment services. Service coverage is highest in urban areas where 87% of the Brazilian population live. Urban service coverage is 100% for water and 85% for sanitation services (In sanitation, 53% of the population has access to sewerage systems while the remainder is served by on-site systems.)

The utilities that participated in the RTM and that were engaged during this DM are well-established companies and state institutions that provide services in a number of Brazil's major urban areas. In providing these services, these utilities have developed major water and wastewater treatment

facilities through significant and ongoing major investments. The current state of Brazil’s water sector infrastructure development and service coverage is a function of significant achievements in recent decades including:

1. A high priority focus on service quality and coverage,
2. A functioning national system to finance sector infrastructure,
3. A high level of cost recovery (when compared to other countries) and
4. The utilization of a number of innovative technical and financial approaches to support the sector.

However, water sector service providers in Brazil still face significant challenges. Among these challenges is the need to expand service coverage to the extensive number of poor Brazilians living in urban slums (favelas) and rural areas. Other service delivery challenges include the periodic droughts that affect major portions of the country, a high level of water pollution (especially in the southeast region of the country) and a low proportion of collected wastewater that is actually treated to an effective international standard prior to discharge.

In recent years, over 140 Brazilian cities were required to ration water during one of the worst extensive and prolonged droughts that the country has experienced with some neighborhoods in major urban areas only receiving water once every three days. Drought conditions have also affected energy supply situations in Brazil because of the country’s heavy reliance on hydroelectric power generation that is dependent on drought influenced rainfall and surface water flows. (This energy-related effect provides an important development driver for the energy effectiveness and power generation projects proposed by the RTM participants and investigated during this DM.)

2.5 The Brazil Water Sector Institutions and Utilities

The water sector in Brazil has gradually evolved over time with changes largely due to political, economic, social and cultural factors that are external to the sector. Until 1968, municipalities were primarily responsible for providing water related services through municipal water and drainage companies that utilized varied financial and administrative structures and processes. As a result, service effectiveness and coverage was random and low. Generally, the sector lacked sufficient institutional structure and capacity to plan and finance increases in service coverage as well as increases in water and wastewater treatment effectiveness. In 1968, the government of Brazil adopted the National Water Supply and Sanitation Plan (PLANASA) which resulted in the creation of a number of new institutions including 27 state owned water and sanitation companies. PLANASA was the first federal government water and sanitation initiative in Brazil and, by 1971, state water and sanitation companies were established in each of the Brazilian states. PLANASA also led to the development of the National Housing Bank (Banco Nacional de Habitacao – BHN) which provided financing for sector infrastructure enhancements.

As a result of Brazil’s continued economic growth and the opportunity for government subsidized interest rates on loans through the BHN, utility services were then able to rapidly expand with the result that service coverage for urban residents increased significantly to the current high levels. As is the case in many countries with emerging economies, the pace of expanding water supply service coverage exceeded that for the provision of sanitation services. This was primarily due to the lower relative cost of water supply infrastructure investments compared to what was required in wastewater management. Also, there is typically a better opportunity for quicker return on investments in water supply

investments due to the extent of revenues derived from metered water charges. As is also typical in other countries, most of the investment during this high growth period was concentrated in the larger urban areas within Brazil (and, internally, within the more affluent and central locales of those urban areas). During this sector high growth period, a significant number of Brazil's municipalities also granted 20 to 30 year concessions to state owned companies while about 1800 municipalities continue to provide services directly through their own institutions or indirectly through municipal companies created for this purpose.

PLANASA was formally abolished in 1992 thereby making it more difficult for state governments to continue financing their state water company needs. As a result, a number of state governments adopted varying development strategies during the 1990s to continue improving and expanding their service base as their population-derived demand increased. These various strategies included the granting of concessions to private sector companies (as was the case in Rio de Janeiro) or taking steps to strengthen the structural independency of the state companies. By necessity, this transitional period also led to diversification in the source of funds utilized for service provision and expansion. This, in turn, led to the introduction of private investors into capital positions within some of the service providers as well as the practice of contracting local private operators to provide system management services.

In 2007, the government of Brazil implemented a new federal water and sanitation law (Lei 11.445/07 Paro o Saneamento Basico) aimed at further increasing investments in the water sector to provide greater access to water and sanitation services. Coincidentally, the government also announced the implementation of a new general development initiative (Program for Acceleration of Growth (PAC)) intended to stimulate major investments in all forms of public infrastructure including highways, airports, ports, as well as the energy and water sectors. This program created a significant financial impetus for water sector development projects and significantly improved the quality of the services that were provided. Under the second phase of the program (PAC II), the Government of Brazil expected to spend about US\$470 billion in developing the country's energy generation and distribution system, roads, railroads, ports, and airports as well as stadiums (as it prepared for the World Cup in 2014 and prepares for the 2016 Olympics.)

The Brazilian federal government also adopted a National Sanitation Plan (PLANSAB) that is intended to provide universal access to potable drinking water by 2023 and universal access to sanitation in urban areas by 2033. The plan is also intended to achieve a 33% coverage level in terms of the amount of wastewater actually treated after collection. (These targeted investment vehicles may help to support the development of the proposed projects evaluated during this DM.)

According to the Brazilian constitution, municipalities are legally responsible for providing water and sanitation services. However, state water sector companies currently exist in 25 of Brazil's 27 states. These state companies are responsible for water supply services in about 3,887 municipalities with a total population of about 103 million people (approximately 75% of Brazil's urban population with water connections). The state companies are also responsible for sewerage services in 893 municipalities with a total population of 45 million people.

Since 1996, 65 municipalities in 10 states (Rio de Janeiro, São Paulo, Paraná, Espírito Santo, Mato Grosso and Pará, among others) have signed concession contracts with private service providers either to provide only water services, only sewer services or both. The remaining utilities engaged during the DM are concessionaires operating under these contractual arrangements.

2.6 The Energy Situation in Brazil

Energy management and cost is one of the critical operational elements faced by each of the water sector entities engaged during the RTM and the DM. According to the United States Energy Information Administration (EIA), Brazil is the ninth largest energy consumer in the world and the third largest in the western hemisphere (behind the United States and Canada). Brazil’s total energy consumption has increased by almost a third over the last decade primarily due to the country’s sustained economic growth.

EIA statistics show that Brazil is the 10th largest energy producer in the world. Because of Brazil’s abundant natural resources (water, natural gas, oil, sunshine, wind, minerals, etc.), energy generation in Brazil is characterized by its renewable sources that have contributed a significant share to the country’s generating capacity. The Brazilian energy sector is strongly dominated by small and large hydropower systems with additional important contributions from biomass from sugar cane agribusinesses and wind power. In recent years, thermal power stations have played a growing role in providing electricity during peak demand periods and during droughts when water levels in reservoirs are low thereby reducing hydroelectric generation capacity. Thermal power plants in Brazil are fueled with biomass, natural gas, petroleum derivatives (residual fuel oil, refinery gas, etc.), nuclear and coal. The mix of power generation sources in Brazil is shown in Figure 4.

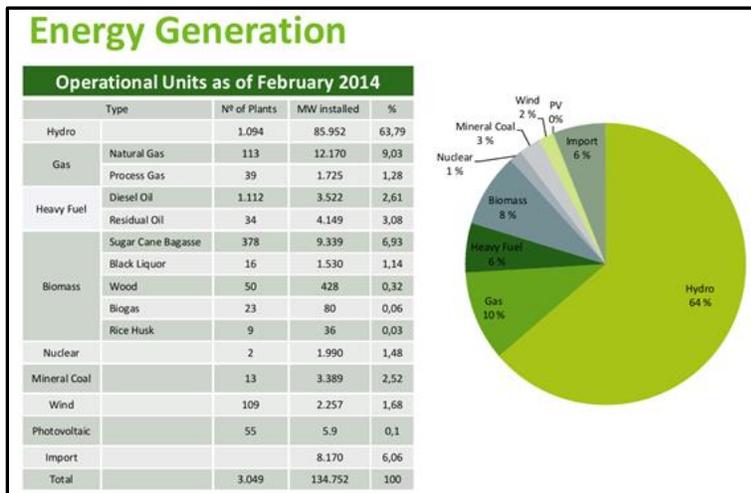


Figure 4 - Current Power Generation Sources in Brazil

In 2014, Brazil experienced its second-driest January in 80 years. Because of this, the water levels in reservoirs throughout Brazil dropped to below an estimated 37% of storage capacity. (Under normal conditions, hydropower reservoirs are filled during the December to March rainy season in Brazil and depleted during the dry southern winter months.) To compound the 2014 drought situation, energy consumption has continued to grow with 10% more energy used throughout the country in January 2014 than in the same month in 2013. Additionally, peak demand in Brazil

reached a record high 86 GW in February 2014.

Because of the major energy concerns created by situations such as those described above, the government of Brazil is expected to invest about US\$ 235 billion in renewables and biofuels within next 10 years. In addition, tariff levels for sold energy increased from about US\$ 45/MWh in 2012 to US\$ 60/MWh in 2013. According to the Government’s Power Expansion Plan for 2011-2021, the per capita electricity consumption in Brazil is expected to increase from 2.4 MWh/capita in 2011 to 3.5 MWh/capita in 2020. To meet this increasing demand, the Power Expansion Plan states that future capacity development will focus on hydroelectric and renewable resources while relying on thermal power sources only when necessary.

A new National Power Expansion Plan was published in 2013, which sought to define Brazil's energy demands through 2050. This plan estimates that the energy generation capacity in Brazil will increase from 116.5 GW in 2011 to 182.4 GW in 2021 with approximately 33.2 GW derived from hydropower

sources, 22.4 GW from other renewable sources (wind, biomass and small hydropower plants), 8.9 GW from thermal power and 1.4 GW from nuclear plants. This will require investments of about US\$ 90 billion (55% for hydropower and 45% for renewable energy). (The need to make these investments to assure future power capacity may provide a basis for governmental support related to the potential use of biogas derived as a byproduct of wastewater treatment as an energy source. Each such application will help to reduce the amount of electricity required from the national grid for wastewater treatment plant operations.)

Brazil's third nuclear power plant (Angra III) is currently under construction and, when operational in 2016, will add 1,405 MW of generation capacity to the 2,007 MW electricity already generated by the two other nuclear power plants in operation within Brazil. One of the driving factors for developing this nuclear plant was a need to reduce the dependence on hydropower sources because of the periodic drought conditions influencing Brazil's assured power capacity.

Historically, the national government maintained a substantial role in Brazil's power sector with almost total control until the 1990s. In 1996, Brazil began a sector privatization process that resulted in the establishment of the National Electric Energy Agency (Aneel). However, energy shortages in 2000 and 2001 (again due to drought conditions) stalled this privatization process. Currently, the bulk of Brazil's principal generation assets remain under government control with a state-owned holding company (Electrobras) assuming a dominant position in the electricity market.

2.7 The Water Sector's Relationship to Energy Matters in Brazil

Water sector infrastructure (that treats and distributes drinking water or that collects and treats wastewater) is energy-intensive. This makes energy matters very important in the viability and effectiveness of service providers. Accordingly, a common theme among the utilities engaged in the RTM and DM is the need to investigate various means for increasing sector energy efficiency or assuring sufficient energy for operational and development purposes. Success in developing these means can result in direct benefits to the service provider customers through lowered operational energy costs which can affect water service charges. Water sector energy efficiency programs can also derive a number of non-energy benefits including the reduction of the need for treatment chemicals and a deferral (or reduction) of capital expenses for service expansion or enhancement. While energy issues can affect both the water supply and wastewater management aspects of the water sector, the following presents an example of the manner by which wastewater collection and treatment is affected.

Wastewater infrastructure generally consists of three principal components including: 1) collection systems (sewers and pumping stations), 2) treatment plants (primary, secondary, and advanced), and 3) effluent disposal. Primary treatment process design is generally consistent where all wastewater treatment plants need to collect, filter and remove solid matter from incoming wastewater streams. However, secondary treatment process designs can vary significantly. (Many Brazilian wastewater treatment plants have only primary treatment.) The most common secondary designs utilize biological processes to remove or treat organic material remaining after primary treatment. Since aerobic bacterial action requires oxygen to function, this is normally provided through some form of aeration system. The most common types of aeration-based processes are activated sludge, aerated lagoons, oxidation ditch/extended aeration plants, and trickling filter which all provide the means for introducing oxygen into contact with the wastewater undergoing the biological treatment process. Of these biological treatment process designs, activated sludge processes (with aeration powered by fans and motors) are the most energy-intensive. For example, in a typical activated sludge based treatment plant, the aeration system represents about 55% of a plant's electricity use while pumping represents an

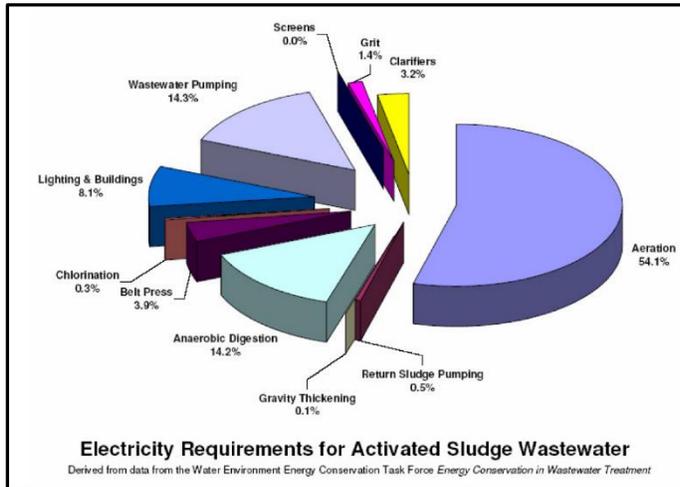


Figure 5 - Typical Activated Sludge Electricity Utilization

additional 15% of the total. The share of electricity requirements at a typical activated sludge treatment facility is shown in Figure 5. All of the functions reflected in this chart are candidates for improved energy efficiency programs that seek to reduce energy use and cost.

Studies have shown that most wastewater treatment plants can reduce their energy requirements (and costs) by up to 30% or more through energy efficiency measures and treatment process modifications such as those defined in the various proposals

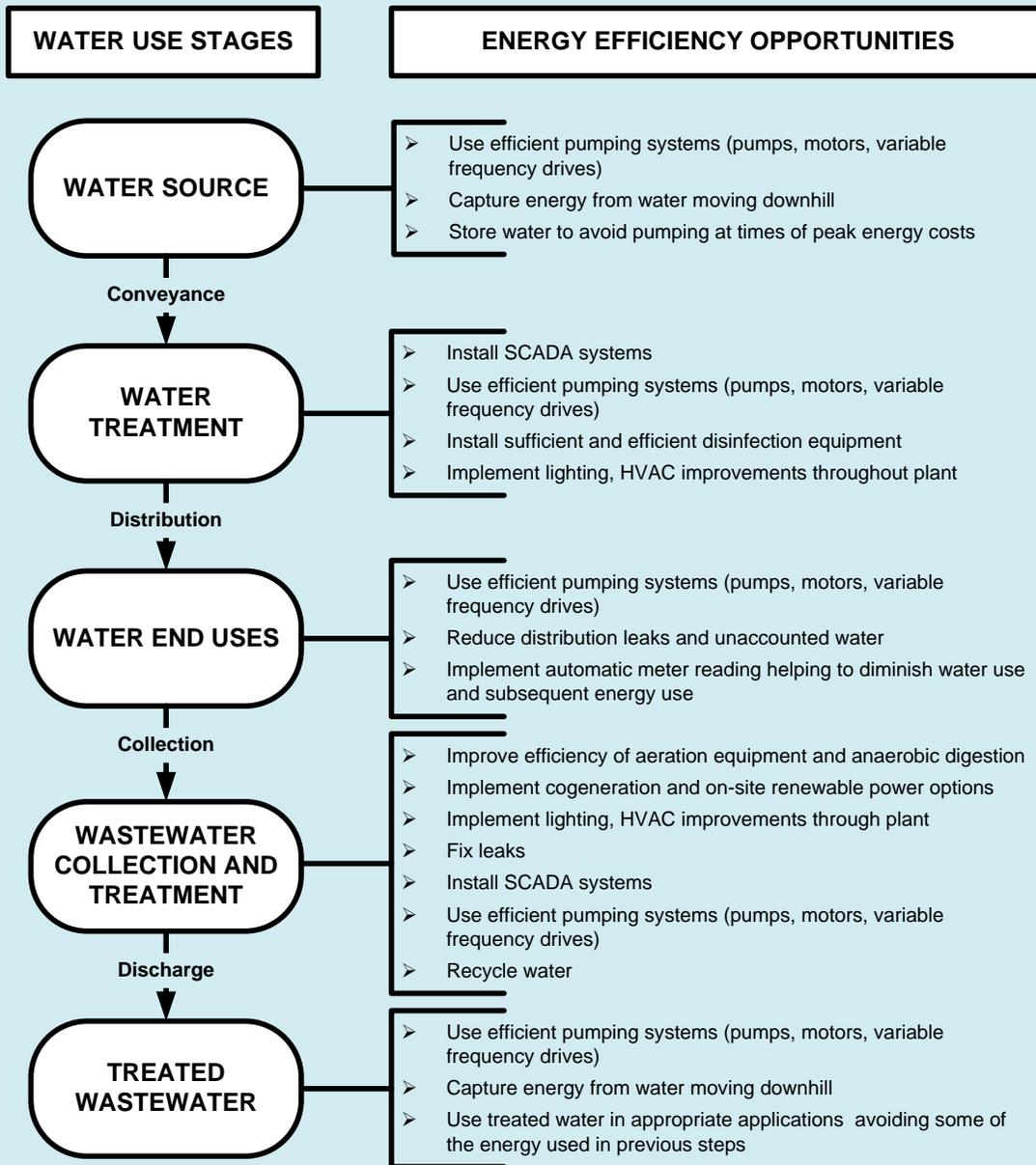
received from the utilities engaged in this DM. Conceptually, water sector utility energy savings can be derived in a number of ways including initiatives to:

- **Optimize system processes** – For example, modifying pumping and aeration systems and implementing monitoring and control systems through SCADA (Supervisory Control and Data Acquisition) systems can increase the energy efficiency of operations. The Electric Power Research Institute (EPRI) estimates that drinking water facilities can save about 5-15% in energy use through the use of adjustable speed drives and high-efficiency motors and drives and 10-20% through process optimization and the use of SCADA control systems. In wastewater facilities, EPRI estimates that 10-20% energy savings are possible through process optimization.
- **Upgrade to more efficient equipment and systems** - Pumps and other equipment that are utilized beyond their useful life will normally operate below their optimal efficiency. In addition, water loss through old or deteriorating water distribution systems can affect energy situations since leaking distribution mains require more energy to deliver water to the end user. Similarly, leaking sewer mains allow groundwater to infiltrate the piping system and increase the flow of water to wastewater treatment plants thereby increasing the hydraulic loading and operational cost of the treatment process.
- **Improve energy management** - Enhancing the means for monitoring and controlling energy utilization within water sector operations and facilities can provide an increased sensitivity to the means for reducing energy consumption and, as a result, costs. The use of automatic control systems can help enhance energy efficiency by optimizing process and equipment functions.
- **Generate usable energy through internal sources** – Throughout the world, many water sector utilities are generating energy on-site to offset purchased electricity. A number of wastewater treatment locations that utilize this approach were observed by the Brazilian utility participants during the RTM. Beyond efficiency measures, these water sector utilities are reducing their energy costs by recovering energy from treatment biogas sources and using the collected biogas to generate electricity, heat the plant and, in some cases, sell electricity back to the grid. (Many of the utilities engaged during the DM are seeking USTDA assistance for this type of project.)

Examples of energy efficiency opportunities within the entire cycle of managing water are shown in Figure 7 on the following page. In addition to a utility’s internal perspectives related to energy reliability and cost, there are other co-benefits associated with utility energy efficiency project outcomes. For example, reducing the amount of energy utilized by the water sector or creating new internal power sources can help to reduce the need for creating new power generation capacity within Brazil while also

helping to reduce the emissions of local and global pollutants such as greenhouse gas (GHG) emissions that may be derived through anaerobic treatment processes. (The high methane content of biogas generated in some wastewater treatment processes makes generated biogas a significant GHG emission.)

Figure 7
Water Sector Energy Efficiency Assessment Factors



3

PROJECT IDENTIFICATION AND INITIAL SCREENING

3.1 Projects Evaluated During the Definitional Mission

COMPANHIA ESTADUAL de AGUAS e ESGOTOS (CEDAE)

CEDAE is the primary water supplier and wastewater collection/treatment parastatal company in the Rio de Janeiro region. During the PerformTech technical team’s in-country meeting with CEDAE on July 22, they provided detailed information on their water and wastewater assets. Based on discussions at that meeting, PerformTech made the following observations:

- Water treatment scenarios utilized by CEDAE typically include conventional coagulation, flocculation and sedimentation and/or filtration systems. Disinfection is provided using chlorine gas or liquid sodium hypochlorite. CEDAE’s largest water treatment facility is the Guandu WTP (with a capacity of about 1,050 MGD) that provides water to the metropolitan Rio de Janeiro area and 12 nearby communities with a total combined population of about 9 million people.
- All of the wastewater collection systems under CEDAE’s jurisdiction are separated (not combined with storm water). CEDAE operates and maintains all of the wastewater treatment and collection facilities within the Rio de Janeiro area and the general treatment level is typically primary treatment (or less) followed by ocean discharge. There are no secondary or tertiary treatment systems and few installations for odor control at the existing facilities. Most wastewater treatment plants have preliminary treatment in the form of influent pumping, coarse and, in some cases, fine screens followed by clarification for solids removal.
- U.S. technology and equipment is currently used by CEDAE in its operations. The CEDAE staff has expressed general satisfaction with the U.S. technology although ensuring local service and availability of spare parts in a timely fashion was noted as a point of concern for any equipment imported into Brazil (not just from the U.S.). Examples of U.S. equipment currently in use by CEDAE include pumps (Allis Chalmers, Flyght and FlowServe), motors, valves, settling tubes, and clarifier equipment (Envirex).

Project Description 1: New Guandu WTP Value Engineering Review

The New Guandu water treatment plant project will serve about nine million people in 12 cities within the Rio de Janeiro Metropolitan Area. The New Guandu WTP will increase the potable water flow needed to supply water in the region. Although CEDAE’s complete development initiative includes the WTP construction and extensive modifications to the existing distribution network, the focus of the project for which USTDA support is sought is solely associated with the WTP design and construction. The cost for CEDAE’s total project is estimated to be about R\$ 3,400,000,000, of which R\$ 1,200,000,000 is associated with the WTP element. In addition, this estimated WTP related cost only includes the first phase of the plant construction which will be the first of two expansions each rated at 12 cubic meters per second (274 MGD). The proposed WTP project is identified as the “New Guandu” plant since CEDAE already has an existing plant called “Guandu” and the source of water for both the existing and proposed plants is the Guandu River.

Although these are currently subject to change, the expected project elements that will be constructed in CEDAE's plans include the following:

- Raw water canal connecting the existing intake
- Desilting (initial sedimentation) basins
- Raw water pumping station
 - 1st phase 6 pumps of 3.0 m³/sec (69 MGD)
 - 2nd phase 6 pumps of 3.0 m³/sec (69 MGD)
- Raw water pipeline
- Flocculators
 - 1st phase - 6 basins in series
 - 2nd phase - 6 basins in series
 - 1 hydraulic flocculator
 - 2 mechanical flocculators
- Settling basins
 - 1st phase - 6 inclined plate settlers
 - 2nd phase - 6 inclined plate settlers
 - Settling tubes 1.2 meters in diameter
 - Design settling rate 150 m³/m²/day
- Filters
 - 1st phase - 36 filters
 - 2nd phase - 36 filters
 - Design flow based on 330 to 400 l/sec
- Filtered water reservoir (2 tanks)
 - Design detention time of 30 minutes for chlorination disinfection
- Treated water pumping station
 - 1st phase - 10 pumps of 1.5 m³/sec (35 MGD)
 - 2nd phase - 10 pumps of 1.5 m³/sec (35 MGD)

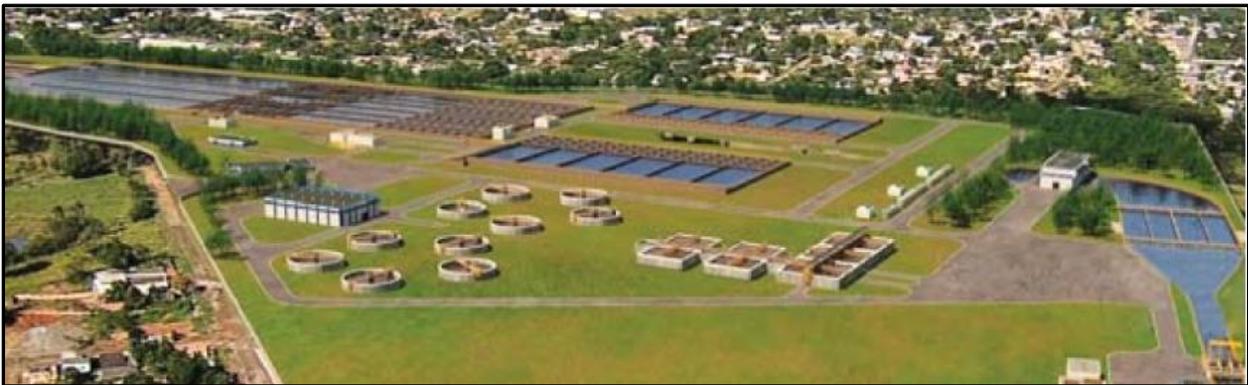
USTDA's assistance is requested for a Value Engineering Review of the Phase 1 design study currently being developed by a local Rio de Janeiro firm (Aquacon Engenharia). The Phase 1 design report will include preliminary designs, calculations, a number of preliminary schematics/plans and an estimate of the number of pumps, unit operations, etc. to be included in the final design. CEDAE has expressed a concern that newer state-of-the-art technology has not been adequately considered by the design consultant based on the observations of the CEDAE representatives during the RTM. As a result, they are requesting a thorough process review of the Phase 1 design report and its recommended equipment.

4

COMPANHIA ESTADUAL de AQUAS e ESGOTOS (CEDAE) VALUE ENGINEERING STUDY

4.1 Project Background

CEDAE's New Guandu water treatment plant project (shown in the artist rendering below) will increase the potable water flow needed to supply water in the Rio de Janeiro region. USTDA's assistance is requested for a Value Engineering Review of the Phase 1 design study being completed by a local Rio de Janeiro firm (Aquacon Engenharia). The Phase 1 design report will include preliminary designs, calculations, a number of preliminary schematics/plans and an estimate of the number of pumps, unit operations, etc. to be included in the proposed final design. CEDAE has expressed a concern that newer state-of-the-art technology has not been adequately considered by the design consultant based on the observations of the CEDAE representatives during the RTM. As a result, they are requesting a thorough process review of the Phase 1 design report and its recommended equipment. This will serve as a basis for potentially incorporating U.S. equipment and systems into the design process thereby increasing the U.S. export opportunities from the New Guandu project.



Artist Rendering of Proposed New Guandu Water Treatment Facility

4.2 Project Sponsor Commitments

CEDAE's design process for the New Guandu wastewater treatment facility is currently underway and the intent of the USTDA support is to complete a value engineering study of the design documentation that is currently in preparation. Clearly, CEDAE is committed to implement this project since they have already begun the design process. In addition, CEDAE's request for the value engineering study is an indication of their commitment to explore the application of U.S. advanced technologies as a means for enhancing the technical and cost effectiveness of the New Guandu WWTP design.

4.3 U.S. Export Potential

The export potential that can be achieved as a result of completing the value engineering study will consist of the design substitutions that will likely incorporate U.S. advanced technologies into the design of the New Guandu treatment facility. This value is estimated at US \$84 million. However, PerformTech expects that the full export potential will be a function of the process of introducing these U.S. advanced technologies into a highly visible water sector development project. Utilization of the U.S. technologies as a substitute for the conventional equipment specified for the project will provide a significant opportunity for replication of the technologies in other new water and wastewater treatment designs throughout Brazil. This will also apply to opportunities that may exist for retrofit of individual systems into existing treatment facilities that are being upgraded for increased efficiency or effectiveness purposes. Accordingly, PerformTech estimates that the export potential for extensive deployment of the systems that may be identified through the value engineering study throughout Brazil will be approximately US\$ 168 million. A breakdown of that export potential is shown in Table 3 below.

		Probable Range
Estimated Project Cost Related to New Guandu WTP (Excluding Civil Intake, Pipelines, etc.)	\$600,000,000	
Estimated Cost Percent for Mechanical Equipment	40%	40 to 45 %
Subtotal Mechanical Cost	\$240,000,000	
Assumed Percentage of Advanced Unit Operations Not Supported by Local Suppliers	35%	30 to 40%
Subtotal Estimated U.S. Export Potential for New Guandu Project	\$84,000,000	
Multiple Factor to Apply to Brazil Water Sector Due to USTDA Funding Catalyst	200%	100 to 300%
TOTAL ESTIMATED IMPORT POTENTIAL	\$168,000,000	

4.4 Impact on U.S. Labor

Based on the above export potential and utilizing the ITA’s analysis of the unit value per job of U.S. exports (\$178,884 of export for every U.S. job created or sustained), PerformTech estimates that the full export potential that may be realized by successful deployment of new technology identified through the value engineering study throughout the Brazilian water sector could positively affect about 470 jobs in the United States.

4.5 Justification for USTDA Support

PerformTech believes that the proposed Value Engineering Study can help to define the application of U.S. advanced technologies into a high priority project in Brazil (in this case, the design of the New Guandu WWTP). The primary justification for USTDA’s involvement in the proposed Value Engineering Study is to provide an opportunity to identify specific applications for U.S. technologies in a project that is on a fast track for implementation. PerformTech believes that the relatively low cost of this form of study can be viewed as a reasonable investment for the possible return that can be associated with substituting U.S. technologies for the designs incorporated into the New Guandu preliminary design documentation.

4.6 Value Engineering Study Terms of Reference

[This portion has been removed for RFP distribution. Please see Annex 5.]

4.7 Value Engineering Study Budget

[This portion has been removed for RFP distribution.]

4.8 Value Engineering Study Schedule

PerformTech anticipates that the Value Engineering Study will be accomplished within four months of the completion of the preliminary design study by the Brazilian consultant. This assumes that CEDAE has completed the process of selecting a U.S. consultant and executed a contract for the Value Engineering Study.

5

PROJECT EVALUATION SUMMARY AND RECOMMENDATIONS

As a result of the above findings and conclusions, PerformTech is recommending that USTDA support the following project:

- 1. CEDAE Value Engineering Study** - Based on the information presented, PerformTech recommends that USTDA consider funding for a proposed Value Engineering Study that will seek to review and existing preliminary design for a major water treatment facility to determine the applicability of more efficient and cost effective U.S. advanced technologies. The anticipated cost of the study is US\$ 199,760. Companhia Estadual de Aguas e Esgotos (CEDAE) will serve as the project sponsor for USTDA grant purposes. Export potential associated with the technical systems that could be upgraded within CEDAE's New Guandu treatment facility design is approximately US\$ 84 million.

A N N E X 3

USTDA NATIONALITY REQUIREMENTS



U.S. TRADE AND DEVELOPMENT AGENCY
Arlington, VA 22209-3901

NATIONALITY, SOURCE, AND ORIGIN REQUIREMENTS
[As of January 17, 2014]

The purpose of USTDA's nationality, source, and origin requirements is to ensure 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, the following provisions shall govern the delivery of goods and professional services funded by USTDA under the Grant Agreement:

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

NATIONALITY:

1) Application

A U.S. firm that submits a proposal must meet USTDA's nationality requirements as of the date of submission of the proposal and, if selected, must continue to meet such requirements throughout the duration of the USTDA-funded activity. These nationality provisions apply to all portions of the Terms of Reference that are funded with the USTDA grant.

2) Definitions

A "U.S. firm" is a privately owned firm that 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. citizens and/or non-U.S. citizens lawfully admitted for permanent residence in the United States, 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 that is organized in the U.S., has its principal place of business in the U.S., and is more than 50% owned by U.S. citizens and/or permanent residents, qualifies as a "U.S. firm".

A nonprofit organization, such as an educational institution, foundation, or association, also qualifies as a "U.S. firm" if it is incorporated in the U.S. and managed by a governing body, a majority of whose members are U.S. citizens and/or permanent residents.

SOURCE AND ORIGIN:

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.

Version 01.17.2014

A N N E X 4

**USTDA GRANT AGREEMENT, INCLUDING MANDATORY AGREEMENT OF
UNDERSTANDING CLAUSES**

BRA 2015-51002A
RECEIVED
DEC 29 2014
PF
U.S. TRADE AND DEVELOPMENT AGENCY
COS(CJ)
GC(EE)
EXE ASST(SU)
RD(NY)
CM(I) (IS)
DCFO(MB)
FINSPCE(B)
GRANTS ADM
(PD)
PIS(AA)

GRANT AGREEMENT

This Grant Agreement is entered into between the Government of the United States of America, acting through the U.S. Trade and Development Agency (“USTDA”) and the Companhia Estadual de Águas e Esgotos (“Grantee”). USTDA agrees to provide the Grantee under the terms of this Grant Agreement US\$ 199,760 (“USTDA Grant”) to fund the cost of goods and services required for technical assistance (“TA”) on the proposed New Guandu Water Treatment Plant Value Engineering Review (“Project”) in Brazil (“Host Country”).

1. USTDA Funding

The USTDA Grant to be provided under this Grant Agreement shall be used to fund the costs of an agreement of understanding between the Grantee and the U.S. firm selected by the Grantee (“U.S. Firm”) under which the U.S. Firm will perform the TA (“Agreement of Understanding”). Payment to the U.S. Firm 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 TA (“Terms of Reference”) are attached as Annex I and are hereby incorporated by reference into this Grant Agreement. The TA will examine the technical, financial, environmental, and other critical aspects of the proposed Project. The Terms of Reference for the TA shall also be included in the Agreement of Understanding.

3. Standards of Conduct

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

4. Grantee Responsibilities

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

5. Agreement of Understanding Matters and USTDA’s Rights as Financier

(A) Grantee Competitive Selection Procedures

Selection of the U.S. Firm shall be carried out by the Grantee according to its established procedures for the competitive selection of firms with advance notice of the procurement

published online through *Federal Business Opportunities* (www.fedbizopps.gov). Upon request, the Grantee will submit these procedures and related documents to USTDA for information and/or approval.

(B) USTDA's Right to Approve U.S. Firm Selection

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

(C) USTDA's Right to Approve Agreement of Understanding Between Grantee and U.S. Firm

(1) Agreement of Understanding

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

(2) Amendments and Assignments

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

(D) USTDA Not a Party to the Agreement of Understanding

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 Agreement of Understanding and any amendments thereto, including assignments, the selection of all firms, the Terms of Reference, the Final Report, and any and all documents related to any Agreement of Understanding 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 U.S. 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 TA and shall not be construed as making USTDA a party to the Agreement of Understanding. 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 Agreement of Understanding 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 U.S. Firm, or relieve the U.S. Firm of any liability which the U.S. Firm 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 Agreement of Understanding or any subcontract thereunder must be consistent with this Grant Agreement. In the event of any inconsistency between the Grant Agreement and the Agreement of Understanding or any subcontract funded by the Grant Agreement, the Grant Agreement shall control.

6. Disbursement Procedures

(A) USTDA Approval of Agreement of Understanding Required

USTDA will make disbursements of USTDA Grant funds directly to the U.S. Firm only after USTDA approves the Grantee's Agreement of Understanding with the U.S. Firm.

(B) U.S. Firm Invoice Requirements

The Grantee should request disbursement of funds by USTDA to the U.S. Firm for performance of the TA by submitting invoices in accordance with the procedures set forth in the USTDA Mandatory Agreement of Understanding Clauses in Annex II.

7. Effective Date

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

8. TA Schedule

(A) TA Completion Date

The completion date for the TA, which is December 31, 2015, is the date by which the parties estimate that the TA will have been completed.



(B) Time Limitation on Disbursement of USTDA Grant Funds

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

9. USTDA Mandatory Agreement of Understanding Clauses

All agreements funded under this Grant Agreement shall include the USTDA Mandatory Agreement of Understanding 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 Agreement of Understanding Clauses, except for Clauses B(1), G, H, I, and S.

10. Use of U.S. Carriers

(A) Air

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

(B) Marine

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

11. Nationality, Source and Origin

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

(a) the U.S. Firm must be a U.S. firm;

(b) the U.S. Firm may use U.S. subcontractors without limitation;

(c) employees of U.S. Firm or U.S. subcontractor firms shall be U.S. citizens, non-U.S. citizens lawfully admitted for permanent residence in the United States or non-U.S. citizens lawfully admitted to work in the United States, except as provided pursuant to subpart (d) below;

(d) up to twenty percent (20%) of the USTDA Grant amount may be used to pay for services performed by (i) Host Country subcontractors, and/or (ii) Host Country nationals who are employees of the U.S. Firm;

(e) a Host Country subcontractor may only be used for specific services from the Terms of Reference identified in the subcontract;

(f) subcontractors from countries other than the United States or Host Country may not be used;

(g) goods purchased for performance of the TA and associated delivery services (e.g., international transportation and insurance) must have their nationality, source and origin in the United States; and

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

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

12. Taxes

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

13. USTDA Project Evaluation

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

14. Recordkeeping and Audit

The Grantee agrees to maintain books, records, and other documents relating to the TA and this Grant Agreement adequate to demonstrate implementation of its responsibilities under this Grant Agreement, including the selection of firms, receipt and approval of Agreement of Understanding deliverables, and approval or disapproval of U.S. Firm 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 TA and the Grant Agreement.

15. Representation of Parties

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

16. Addresses of Record for Parties

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

To: Gustavo Tannure
Manager for Energy and Energy Efficiency
Companhia Estadual de Águas e Esgotos
Avenida Presidente Vargas, 2655
Rio de Janeiro, RJ, Brazil 20210-030

Phone: 55-21-2332-3228
Fax: 55-21-2332-3730
E-Mail: gustavo-tannure@cedae.com.br

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

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

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

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

Appropriation No.: 11 15/16 1001
Activity No.: 2015-51002A
Reservation No.: 2015022
Grant No.: GH 201551022

17. Implementation Letters

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

18. Grant Agreement Amendments

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

19. Termination Clause

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

20. Non-waiver of Rights and Remedies

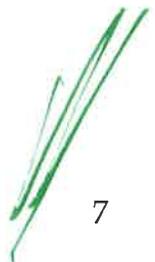
No delay in exercising any right or remedy accruing to either party in connection with the Grant Agreement shall be construed as a waiver of such right or remedy.

21. U.S. Technology and Equipment

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

22. Governing Law

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



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23. Counterparts

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

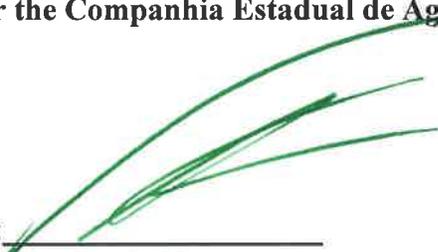
[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK]

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

For the Government of the United States of America

For the Companhia Estadual de Águas e Esgotos

By: 
John S. Creamer
Consul General
U.S. Consulate General – Rio de Janeiro

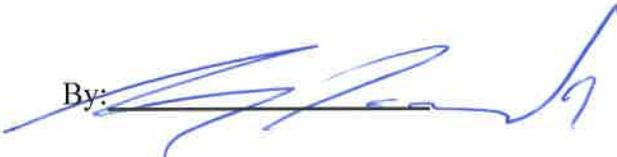
By: 
Wagner Granja Victor
President

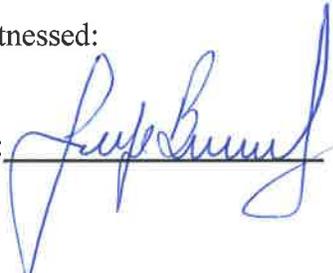
Date: 22/12/2014

Date: 22/12/2014

Witnessed:

Witnessed:

By: 

By: 

Annex I -- Terms of Reference

Annex II -- USTDA Mandatory Agreement of Understanding Clauses

Annex II

USTDA Mandatory Agreement of Understanding Clauses

A. USTDA Mandatory Clauses Controlling

The parties to this Agreement of Understanding acknowledge that this Agreement of Understanding 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 _____ (“Client”), dated _____ (“Grant Agreement”). The Client has selected _____ (“U.S. Firm”) to perform the technical assistance (“TA”) for the _____ project (“Project”) in _____ (“Host Country”). The Client and the U.S. Firm are the parties to this Agreement of Understanding, and they hereinafter are referred to collectively as the “Agreement of Understanding Parties.” Notwithstanding any other provisions of this Agreement of Understanding, the following USTDA Mandatory Agreement of Understanding Clauses shall govern. All subcontracts entered into by U.S. Firm funded or partially funded with USTDA Grant funds shall include these USTDA Mandatory Agreement of Understanding Clauses, except for Clauses B(1), G, H, I, and S. In addition, in the event of any inconsistency between the Grant Agreement and the Agreement of Understanding or any subcontract thereunder, the Grant Agreement shall be controlling.

B. USTDA as Financier

(1) USTDA Approval of Agreement of Understanding

This Agreement of Understanding, and any amendment thereto, including any amendment to any annex thereto, and any proposed assignment of this Agreement of Understanding, 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 Agreement of Understanding conforms to modifications required by USTDA during the Agreement of Understanding review process and the Agreement of Understanding has been formally approved by USTDA. To make this review in a timely fashion, USTDA must receive from either the Client or the U.S. Firm an English language version of a final negotiated draft Agreement of Understanding or a signed Agreement of Understanding to the attention of the General Counsel's office at USTDA's address listed in Clause M below.

(2) USTDA Not a Party to the Agreement of Understanding

It is understood by the Agreement of Understanding Parties that USTDA has reserved certain rights such as, but not limited to, the right to approve the terms of this Agreement of Understanding and amendments thereto, including assignments, the selection of all firms, the Terms of Reference, the Final Report, and any and all documents related to any Agreement of Understanding funded under the Grant

Agreement. The Agreement of Understanding 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 TA and shall not be construed as making USTDA a party to the Agreement of Understanding. The Agreement of Understanding 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 Agreement of Understanding Parties or the parties to any subcontract, jointly or separately; and in consideration of USTDA's role as financier, the Agreement of Understanding Parties further agree that USTDA's rights may be exercised without thereby incurring any responsibility or liability, in contract, tort, or otherwise, to the Agreement of Understanding Parties or the parties to any subcontract. Any approval or failure to approve by USTDA shall not bar the Client or USTDA from asserting any right they might have against the U.S. Firm, or relieve the U.S. Firm of any liability which the U.S. Firm might otherwise have to the Client or USTDA.

C. Nationality, Source and Origin

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

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

(h) goods and services incidental to TA 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 U.S. Firm 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 Agreement of Understanding. These books, records, and other documents shall clearly identify and track the use and expenditure of USTDA funds, separately from other funding sources. Such books, records, and documents shall be maintained during the period of performance of work provided for by this Agreement of Understanding, and for a period of three (3) years after final disbursement by USTDA. The U.S. Firm 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 U.S. Firm shall provide adequate Workman's Compensation Insurance coverage for work performed under this Agreement of Understanding.

G. Disbursement Procedures

(1) USTDA Approval of Agreement of Understanding

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

(2) Payment Schedule Requirements

A payment schedule for disbursement of Grant funds to the U.S. Firm shall be included in this Agreement of Understanding. 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 Agreement of Understanding performance milestones; and (3) the final payment may be no less than fifteen percent (15%) of the total USTDA Grant amount, payable upon approval by USTDA of a Final Report that has been (i) prepared and submitted in accordance with the requirements set forth in Clause I below, and (ii) approved in writing by the Client in the manner provided for by Clause G(3)(b)(iii) below. Invoicing procedures for all payments are described below.

(3) U.S. Firm Invoice Requirements

USTDA will make all disbursements of USTDA Grant funds directly to the U.S. Firm. The U.S. Firm 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 U.S. Firm for performance of the Agreement of Understanding by submitting the following to USTDA:

(a) U.S. Firm's Invoice

The U.S. Firm's invoice shall include reference to an item listed in the Agreement of Understanding payment schedule, the requested payment amount, and an appropriate certification by the U.S. Firm, as follows:

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

“As a condition for this mobilization payment, the U.S. Firm certifies that it will perform all work in accordance with the terms of its Agreement of Understanding with the Client. To the extent that the U.S. Firm does not comply with the terms and conditions of the Agreement of Understanding, including the USTDA Mandatory Agreement of Understanding Clauses contained therein, it will, upon USTDA’s request, make an appropriate refund to USTDA.”

(ii) For Agreement of Understanding performance milestone payments:

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

(iii) For final payment:

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

(b) Client's Approval of the U.S. Firm's Invoice

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

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

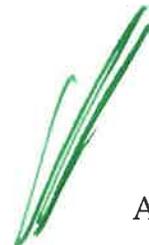
“The services for which disbursement is requested by the U.S. Firm have been performed satisfactorily, in accordance with applicable Agreement of Understanding provisions and the terms and conditions of the USTDA Grant Agreement.”

(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 U.S. Firm have been performed satisfactorily, in accordance with applicable Agreement of Understanding provisions and the terms and conditions of the USTDA Grant Agreement. The Final Report submitted by the U.S. Firm has been reviewed and approved by the Client.”

(c) USTDA Address for Disbursement Requests

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



H. Termination

(1) Method of Termination

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

(2) Ramifications of Termination

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

(3) Survivability

Clauses B, D, G, H, N and S of the USTDA Mandatory Agreement of Understanding Clauses shall survive the termination of this Agreement of Understanding.

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 U.S. Firm shall provide the following to USTDA:

- (a)** One (1) complete hard copy of the Final Report for USTDA's records. This version shall have been approved by the Client in writing and must be in the English language. It is the responsibility of the U.S. Firm to ensure that

confidential information, if any, contained in this version be clearly marked. USTDA will maintain the confidentiality of such information in accordance with applicable law.

and

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

and

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

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

(3) Final Report Presentation

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

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

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

responsibility for, the accuracy or completeness of the information contained in this report.”

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

(c) The U.S. Firm 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 U.S. Firm who prepared the report, a report title, and the following language:

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

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

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

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

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

J. Modifications

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



K. TA Schedule

(1) TA Completion Date

The completion date for the TA, which is December 31, 2015, is the date by which the Agreement of Understanding Parties estimate that the TA 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 Agreement of Understanding for goods and services which are provided prior to the Effective Date of the Grant Agreement; and (b) no USTDA funds may be disbursed more than four (4) years after the Effective Date of the Grant Agreement.

L. Business Practices

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

M. USTDA Address and Fiscal Data

Any communication with USTDA regarding this Agreement of Understanding 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 15/16 1001
Activity No.: 2015-51002A
Reservation No.: 2015022
Grant No.: GH 201551022

N. Taxes

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

O. Export Licensing

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

P. Contact Persons

The Client designates the following person as the contact person for matters concerning this Agreement of Understanding:

Gustavo Tannure
Manager for Energy and Energy Efficiency
Phone: 55-21-2332-3228
Fax: 55-21-2332-3730
E-Mail: gustavo-tannure@cedae.com.br

The U.S. Firm designates the following person as the contact person for matters concerning this Agreement of Understanding:

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

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



Q. Liability

This Agreement of Understanding may include a clause that limits the liability of the Agreement of Understanding Parties, provided that such a clause does not (i) disclaim liability for damages that are natural, probable, and reasonably foreseeable as a result of a breach of this Contract, or (ii) limit the total amount of damages recoverable to an amount less than the total amount disbursed to the U.S. Firm pursuant to this Agreement of Understanding. If any clause included by the Agreement of Understanding Parties is inconsistent with either or both of these limitations, it shall be invalid and unenforceable to the extent of the inconsistency.

R. Arbitration

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

S. Reporting Requirements

The U.S. Firm 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 TA. In addition, if at any time the U.S. Firm receives follow-on work from the Client, the U.S. Firm shall so notify USTDA and designate the U.S. Firm's contact point including name, telephone, fax number, and e-mail address. Since this information may be made publicly available by USTDA, any information which is confidential shall be designated as such by the U.S. Firm and provided separately to USTDA. USTDA will maintain the confidentiality of such information in accordance with applicable law.

A N N E X 5

TERMS OF REFERENCE (FROM USTDA GRANT AGREEMENT)

Terms of Reference

Purpose and Background

This Terms of Reference (TOR) defines responsibilities and deliverables for a U.S. Firm to successfully complete Technical Assistance (TA) in the form of a Value Engineering Review of the existing preliminary design report for the New Guandu Water Treatment Plant in Rio de Janeiro, Brazil.

The grantee is the Companhia Estadual de Águas e Esgotos (CEDAE), the primary water supplier and wastewater collection/treatment company in the Rio de Janeiro area. CEDAE's water division operates and maintains over 75 water treatment plants (WTPs) including the Guandu WTP, which is the largest in the world. Due to the growth of the Rio de Janeiro service area, the Guandu WTP needs to be expanded and CEDAE is planning to construct a New Guandu WTP which will have a design capacity of over 548 million gallons per day (MGD), constructed in two phases of 274 MGD each. The New Guandu WTP project will benefit about nine million people in 12 cities inside the Rio de Janeiro metropolitan area.

CEDAE and its design contractor, Aquacon Engenharia from Rio de Janeiro, recently completed a Base Phase 1 Study that includes preliminary designs, support calculations, a number of preliminary plans, and an estimate of the number of pumps, unit operations, etc. to be included in the design of the New Guandu WTP. However, CEDAE senior management would like more advanced state-of-the-art technology to be appropriately considered for inclusion in the Base Phase 1 Study, and they have requested a thorough process review of the report. Historically, water treatment facilities in the region utilized conventional treatment processes including coagulation, flocculation, sedimentation and/or filtration, and disinfection by chlorine gas or liquid sodium hypochlorite. The current recommendations contained in the Base Phase 1 Study also specify conventional water treatment processes for the systems listed below:

- Raw water canal connecting the existing intake
- Desilting (initial sedimentation) basins
- Raw water pumping station
- Raw water pipeline
- Flocculators
- Settling basins
- Filters
- Filtered water reservoir (2 tanks)
- Treated water pumping station

The Value Engineering Review will assess the existing Base Phase 1 preliminary design report and make recommendations to CEDAE for U.S.-sourced technologies and equipment that could improve the new water treatment plant's overall cost-effectiveness and efficiency. Specifically, the Value Engineering Review will evaluate the recommendations provided in the existing

preliminary design study, conduct analysis on the base flow and load characteristics for the new facility, complete detailed technical analysis of major systems, and determine alternative state-of-the-art systems and technologies. The objective of this analysis is to produce a comprehensive list of U.S. sources of supply that CEDAE can consider in its development process.

The principal water treatment systems that would be analyzed include influent screening and pumping, primary solids removal, chemical coagulation, flocculation and precipitation, advanced oxidation analysis, tertiary and membrane filtration, optimization of disinfection options, sludge thickening, dewatering and drying, and energy efficiency and power management analysis.

Certain technologies absent from the Base Phase 1 report that CEDAE senior management would like to have assessed in the Value Engineering Review and potentially incorporated into the preliminary design include membrane filtration and ultrafiltration processes, advanced oxidation/disinfection processes such as ozone, mixed oxidants (sodium hypochlorite and hydrogen peroxide), and ultraviolet disinfection, energy recovery processes, and energy efficiency equipment such as integrated variable frequency drives and energy efficient aeration blowers and systems.

The total estimated project cost for the WTP is approximately \$650 million, which considers only the first phase of the plant construction of 12 cubic meters per second (274 million gallons per day). A future expansion will add capacity for another 274 million gallons per day. The New Guandu WTP is part of a larger development initiative, the New Guandu Complex, which includes extensive modifications to the existing distribution network in addition to the new WTP. The focus of this assignment relates solely to the New Guandu WTP design.

This TOR anticipates the U.S. Firm will hold meetings and conference calls with CEDAE to collect and incorporate input from its subject matter experts and identify the appropriate means of accomplishing TA objectives. Specifically, CEDAE will furnish the Base Phase 1 Report and provide information related to the specifications of the WTP. The U.S. Firm is expected to travel to Brazil to meet with CEDAE at project kick-off and at the completion of the Value Engineering Review, to present the final results of the work. The U.S. Firm is required to formulate alternatives, perform technical analyses, synthesize materials into reports and briefings, and develop presentations and/or meeting materials. The U.S. Firm is required to submit deliverables for each Task as defined below. The deliverables shall be developed in accordance with best industry practices and shall be in accordance with applicable U.S. and Brazilian laws, rules, and regulations. The TA shall also be conducted in accordance with the operating policies, standards and procedures of CEDAE.

The Base Phase 1 Study will be made available in Portuguese by CEDAE upon the commencement of this TA. If the U.S. Firm requires the Base Phase 1 Study to be translated to English, the U.S. firm shall be responsible for acquiring the translation. This expense has been included as part of the USTDA grant funds. All deliverables for all tasks shall be provided in both English and Portuguese.

Tasks

The U.S. Firm shall effectively manage all required activities for the duration of this assignment to complete the required tasks and accomplish all target objectives. The U.S. Firm shall be the primary point of contact for all matters related to the TOR and shall work closely with the CEDAE designated staff. The U.S. Firm shall be responsible for tracking and reporting the project status to CEDAE on a regular basis and ensuring the technical and procedural quality of the assessment to include, but not limited to, the following:

- Submission of required reports and invoices to CEDAE in a thorough and timely manner
- Thoroughness of all evaluations and the deliverables including the final report
- Effective quality assurance/quality control in all matters associated with the project
- Presentation of the Value Engineering Review results to CEDAE for their consideration

The following defines the specific tasks that the U.S. Firm shall be required to complete:

Task 1: Plan, Coordinate and Manage Project Resources, Schedule and Activities

Task 1.1 - Prepare and submit a project inception plan

The U.S. Firm shall provide an inception report to describe the project management activities to be undertaken in support of this TOR. To complete this task, the U.S. Firm shall submit the inception plan within two weeks of award to define the procedures that the U.S. Firm will utilize in accomplishing all TOR tasks. At a minimum, this shall include all logistical procedures as well as communication elements required to secure input from CEDAE and derive sufficient information to complete the TA.

Ongoing and regular communication with the CEDAE designated representatives is a necessary and key element of this assessment and the manner by which this communication process is to occur shall be defined in the inception report. The U.S. Firm shall identify the CEDAE staff members that may be required to provide information or review deliverables. Subject to CEDAE's concurrence, the U.S. Firm shall also seek the participation of Aquacon Engenharia and any relevant regulatory agencies for the provision of information relevant to the Value Engineering Review.

Task 1 Deliverables

The U.S. Firm shall prepare a detailed written report describing all the work performed and findings from Task 1, including:

- the Detailed Inception Plan

Task 2 – Analysis of Existing Conditions

The U.S. Firm shall complete the following tasks to review the existing conditions that influence the design of the New Guandu WTP as defined by the existing Base Phase 1 design work and intended output. This shall be accomplished through the following tasks:

Task 2.1 - Gather initial information

Upon contact award, the U.S. Firm shall solicit a copy of the Base Phase 1 Study and any other relevant reports and design information from CEDAE for initial review prior to meeting with CEDAE in Brazil. Within one month of award, the U.S. Firm's representatives shall travel to Brazil to meet with CEDAE staff to: 1) gather all other relevant information necessary to complete the assessment (particularly as it relates to the existing Base Phase I report and design); 2) review, discuss, and refine the overall strategy, scope, objectives, and deliverables of the TA; 3) define and clarify the roles and responsibilities of the U.S. Firm and CEDAE with respect to the assessment activities; and 4) investigate all aspects of the Base Phase 1 design to enable review of the design intent and application of alternative technologies and systems.

During this initial fieldwork period, the U.S. Firm shall also seek to meet with other pertinent stakeholders including Aquacon Engenharia, regulatory agencies or others to discuss the current design and its intended outcomes. This task will seek to investigate all relevant previous studies and the condition of all existing assets that are relevant to the project. The objective of the initial field work is to seek an explanation of the process used to formulate, assess and recommend the technologies currently defined in the design documents. At the conclusion of this initial field work, a synopsis of project elements determined to be properly completed and project elements that should be further evaluated will be defined.

Task 2.2 – Review current baseline design package

Through this task, the U.S. Firm shall undertake a detailed review of the current Base Phase I design elements (reports, plans, calculations, etc.) to technically define the current design concepts and proposed equipment design and specifications. This review will form the basis for identifying alternative systems and technologies that may be substituted for systems currently specified to increase the efficiency or cost effectiveness of the proposed WTP. It is the responsibility of the U.S. Firm to have the appropriate reports and designs translated as necessary.

Task 2.3 - Assess siting evaluations related to the New Guandu WTP

The proposed site for the New Guandu WTP should be assessed relative to various treatment technologies currently defined in the existing Base Phase 1 Study design and to other technologies that may be considered in the Value Engineering Review. At a minimum, this should include geotechnical considerations, impacts on the hydraulic profile of the WTP and electrical demand modifications.

Task 2 Deliverables

The U.S. Firm shall prepare a detailed written report describing all the work performed and findings from Task 2, including:

- Synopsis of field work findings
- Review of the Base Phase 1 Study design
- Assessment of siting evaluation

Task 3: Define Flows and Load Conditions Related to the New Guandu WTP

This task seeks to define and review the flow and contaminant load characteristics that are the foundations for the proposed design. This will be important to identify the alternative systems and technologies that will accomplish the necessary treatment processes incorporated in the initial preliminary design. This shall be accomplished through the following tasks:

Task 3.1 – Assess target facility design basis and background

Through this task, the U.S. Firm shall define and evaluate the anticipated flow and load characteristics of the proposed water treatment plant that will define its required water throughput flow and treatment efficiency. This shall include an assessment of the design flows during average annual, monthly, daily and peak hourly conditions to assess their impacts on the various unit operations. In addition, this initial assessment will characterize the range of concentrations of pollutants, turbidity levels, pH range, and temperature variations of the surface water source to determine their impacts on the design and unit operations contained in the New Guandu WTP design.

Task 3.2 – Evaluate design requirements and anticipated system performance

The U.S. Firm shall determine the design basis and intent for individual key systems based on the anticipated flow and load requirements determined during Task 3.1. This will include the technical requirements associated with the magnitude of flow and the necessary level of treatment based on regulatory requirements that currently exist in Brazil.

Task 3 Deliverables

The U.S. Firm shall prepare a detailed written report describing all the work performed and findings from Task 3, including:

- Assessment of design basis and background
- Definition of the design requirements and intent for individual key systems

Task 4: Define Alternative Systems and Technologies to Achieve Increased Treatment Efficiency and Cost-effectiveness and Develop a List of U.S. Sources of Supply

This task seeks to define the alternative systems that could be incorporated into the New Guandu WTP design to achieve the desired efficiency and cost effectiveness outcomes and to identify U.S. Sources of Supply for these systems. This shall be accomplished through the following tasks:

Task 4.1 – Complete detailed technical analysis of major systems that define plant function and efficiency

The U.S. Firm shall identify the key systems and equipment incorporated into the current design that may be candidates for substitution to achieve the efficiency and cost effectiveness outcomes

that are the anticipated results of the Value Engineering Review. At a minimum, this is expected to include the following systems, equipment and functions:

1. **Influent Screening and Pumping** - The optimization of pumps, motors and controls at the surface water source shall be considered for evaluation.
2. **Primary Solids Removal** - The options for optimizing settleable solids shall be identified. This may include simple hydro-cyclones and centrifuges, inclined plate settlers and conventional gravity clarification systems.
3. **Chemical Coagulation, Flocculation and Precipitation** - The basic water chemistry to meet surface waters regulatory conditions shall be investigated to assess appropriate coagulation, flocculation and precipitation processes. This may include conventional chemical processes or advanced processes such as electrocoagulation. Further, the means of solids separation may include a variety of physical sedimentation, dissolved air flotation (DAF), or various membrane separation processes.
4. **Advanced Oxidation Analysis** - Oxidation to convert various metal species such as iron and manganese to the proper oxidative state for precipitation and to remove volatile organic compounds shall be evaluated to determine their applicability to the required treatment train and design intent. In addition, advanced oxidation processes for total organic carbon (TOC) and organic precursor removal shall be considered.
5. **Tertiary Filtration and/or Membrane Filtration** - Tertiary (multi-media filtration) and membrane (ultrafiltration) treatment processes shall be considered.
6. **Optimization of Disinfection Options** – The optimization of disinfection options shall be considered in conjunction with the upstream unit operations design. For example, ultraviolet (UV) disinfection is extremely complimentary when membrane filtration is used for advanced solids separation. Combinations of various disinfectants shall be assessed in comparison to the current design proposal to use sodium hypochlorite or chlorine gas for disinfection purposes.
7. **Sludge Thickening, Dewatering and/or Drying** - The current design identifies the need for sludge thickening, dewatering and drying but does not specify what technologies should be considered for implementation. Technologies for managing WTP sludge such as rotary drum thickeners, gravity drum thickeners, centrifuges, and drying operations shall be considered.
8. **Energy Efficiency and Power Management Analysis** - Inherent to all of the above unit operations is the need to include energy efficiency and power management technologies as a key element of the design and these shall be considered in the Value Engineering Review.

Task 4.2 – Define comparable alternative U.S. technologies that can improve design cost effectiveness and functional efficiency

Through this task, the U.S. Firm shall identify the alternative U.S.-sourced technologies, equipment and systems that may provide increased treatment efficiency, lower capital and operating/maintenance costs or other potential benefits. The U.S. Firm shall provide a detailed description of the technical and economic benefits that may be derived as a result of substituting the currently specified and designed systems with the alternative technologies and systems. At a minimum, this shall include all technologies, equipment and systems that will accomplish the

design intent of the water treatment facility including systems and function related to the management of energy requirements for the proposed facility.

Task 4.3 – Develop a List of U.S. Sources of Supply

The U.S. Firm shall develop a detailed list of U.S. companies that could provide equipment, services, and technology to the New Guandu WTP, as defined in Task 4.2. This list shall be comprehensive in covering the equipment and services that CEDAE may need for the successful technical and commercial operations of the New Guandu WTP in areas such as operating management, maintenance management, and quality control where relevant.

These lists shall include (i) the possible U.S. sources of supply and/or services; (ii) a detailed description of relevant products, solutions and/or services to be provided; and (iii) contact information for the party or parties responsible for marketing/sales in the United States and Brazil, if applicable. The business name, point of contact, address, telephone number, and e-mail address shall be included for each identified party. The U.S. Firm shall engage relevant potential suppliers in discussions, analyze their interest in supplying equipment and services for the New Guandu WTP and document the results of these discussions for CEDAE.

Task 4 Deliverables

The U.S. Firm shall prepare a detailed written report describing all the work performed and findings from Task 4, including:

- Definition of the key treatment and control systems where alternatives may be available for increased efficiency and treatment effectiveness
- Description of alternative systems, technologies and treatment processes that may be considered in the WTP design, including technical and economic benefits
- List of U.S. Sources of Supply for these alternative systems

Task 5: Conduct a Preliminary Review of Environmental Impacts of the Alternative Technologies and Systems

This task seeks to determine that the environmental impact of the alternative systems on the New Guandu WTP Project. This shall be accomplished through the following task:

Task 5.1 – Conduct a preliminary review of environmental impacts of the alternative technologies and systems

Through this task, the U.S. Firm shall define the environmental impact of utilizing the alternative systems and technologies in comparison to the elements specified in the original design. The preliminary review of environmental impacts shall consider international standards required by international financial institutions such as the World Bank Group and local Brazilian standards. The U.S. Firm's review shall identify potential negative impacts, discuss the extent to which these impacts can be mitigated, and make recommendations for a full environmental impact assessment that may be required. The U.S. Firm shall also identify potential positive impacts

resulting from the technology substitutions recommended as a result of the Value Engineering Review.

Task 5 Deliverables

The U.S. Firm shall prepare a detailed written report describing all the work performed and findings from Task 5, including:

- Preliminary review of environmental impacts of utilizing the alternative systems and technologies in comparison to the elements specified in the original design

Task 6: Assess the Development Impact of Implementing the Recommended Options

The U.S. Firm shall assess the anticipated development impacts that may be generated by the technology and system substitutions. The purpose of the development impact assessment is to provide the potential decision makers and interested parties with a broader view of the potential value of implementing the alternative elements that can increase the cost effectiveness and efficiency of the New Guandu WTP. The analysis shall focus on the development impacts that are likely to occur if the recommendations in the Value Engineering Review are implemented. This shall be accomplished through the following tasks:

Task 6.1 – Define infrastructure development and efficiency gains

The U.S. Firm shall identify the anticipated infrastructure development and efficiency gains and improvements that will be made through implementation of the recommended design substitutions with specific attention to the technical and economic advantages created as a result of the alternative designs.

Task 6.2 – Define impact on human capacity building

The U.S. Firm shall provide descriptions and estimates of the anticipated human capacity gains that will be made through implementation of the project recommendations relative to the alternative technologies, with specific attention to:

- Jobs Created: Estimated net gain in temporary and permanent jobs created by implementation which shall account for the workforce's transition as the new technologies are implemented.
- Training and Skill Development: Estimated number of individuals that will benefit from training and/or new skills development during implementation of the technology and system substitutions.

Task 6.3 – Define impact on technology transfer for productivity improvement

The U.S. Firm shall identify the anticipated developmental gains in technology transfer that will be made through implementation of the recommended design substitutions with specific attention to the effect on productivity improvement in CEDAE's operations.

Task 6 Deliverables

The U.S. Firm shall prepare a detailed written report describing all the work performed and findings from Task 6, including:

- Description of infrastructure development and efficiency gains
- Description of human capacity building impacts
- Description of technology transfer impacts

Task 7: Determine the Financing and Regulatory Impact of the Alternative Technologies and Systems

The U.S. Firm shall perform a financial analysis and cost-benefit analysis relative to the alternative systems as compared to the systems included in the Base Phase I design report. This shall be accomplished through the following tasks:

Task 7.1 – Complete cost benefit analysis associated with the alternative systems identified through the Value Engineering Review

The U.S. Firm shall conduct a cost-benefit analysis and articulate the business case for the substitution of the alternative systems and technologies identified through the Value Engineering Review.

Task 7.2 – Evaluate the potential impact of the alternative systems on financing options currently identified for the construction project

Through this task, the U.S. Firm shall identify benefits or impediments on potential financing options for CEDAE created by the substitution of the alternative systems recommended through the Value Engineering Review. This will include any impediments created by local content requirements that may be a factor in financing the proposed New Guandu WTP construction project.

Task 7.3 – Review regulatory requirements for model system deployment

The U.S. Firm shall evaluate any regulatory impacts associated with the substitution of the alternative designs in the project. At a minimum, this will include the identification of any issue that could trigger additional regulatory requirements as well as a recommendation for the mitigation of any issues identified.

Task 7 Deliverables

The U.S. Firm shall prepare a detailed written report describing all the work performed and findings from Task 7, including:

- Cost benefit analysis
- Financial impact assessment
- Regulatory impact assessment

Task 8: Develop Assessment of Cost Impact of Implementing the Recommendations

The U.S. Firm shall evaluate the cost impact associated with the identified alternative systems and technologies including both potential impact on capital and operating/maintenance costs. This shall be accomplished through the following tasks:

Task 8.1 – Define the cost of the technology and system design substitutions

The U.S. Firm shall prepare a detailed cost estimate of the comparable costs associated with the substitutions recommended within the Value Engineering Review. At a minimum, this will include an assessment of cost impact on capital costs as well as operating/maintenance costs of the alternative designs in comparison to those associated with the current design approach. A present net worth analysis based on 20 years of operation should be prepared for the Value Engineering Review recommendations.

Task 8.2 – Define the long-term cost impact of the recommended design alternatives

The U.S. Firm shall provide a detailed economic analysis of the long-term economic impact of the alternative designs in comparison to those associated with the current design approach. This will include an assessment of each major system where alternative design approaches are recommended.

Task 8 Deliverables

The U.S. Firm shall prepare a detailed written report describing all the work performed and findings from Task 8, including:

- Cost estimate
- Long-term cost impact assessment

Task 9: Final Report

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

The U.S. Firm shall provide the Public and Confidential versions of the Final Report to the Grantee in both English and Portuguese. The U.S. Firm will provide copies of the report on CD ROM and in hard copy.

A N N E X 6

U.S. FIRM INFORMATION FORM



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

U.S. Firm Information Form

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

USTDA Activity Number [<i>To be completed by USTDA</i>]							
Activity Type [<i>To be completed by USTDA</i>]		Feasibility Study		Technical Assistance		Other (specify)	
Activity Title [<i>To be completed by USTDA</i>]							
Full Legal Name of U.S. Firm							
Business Address (street address only)							
Telephone		Fax		Website			
Year Established (include any predecessor company(s) and year(s) established, if appropriate). Please attach additional pages as necessary.							
Type of Ownership		Publicly Traded Company					
		Private Company					
		Other (please specify)					
Please provide a list of directors and principal officers as detailed in Attachment A. Attached? (Not Applicable for U.S. Publicly Traded Company)						Yes	
If Private Company or Other (if applicable), provide a list of shareholders and the percentage of their ownership. In addition, for each shareholder that owns 15% or more shares in U.S. Firm, please complete Attachment B.							
Is the U.S. Firm a wholly-owned or partially owned subsidiary?		Yes					
		No					
If so, please provide the name of the U.S. Firm's parent company(ies). In addition, for any parent identified, please complete Attachment B.							
Is the U.S. Firm proposing to subcontract some of the proposed work to another firm?		Yes					
		No					
If yes, U.S. Firm shall complete Attachment C for each subcontractor. Attached?		Yes					
		Not applicable					
Project Manager							
Name		Surname					
		Given Name					
Address							
Telephone							
Fax							
Email							
Negotiation Prerequisites							
Discuss any current or anticipated commitments which may impact the ability of the U.S. Firm or its subcontractors to complete the Activity as proposed and reflect such impact within the project schedule.							
Identify any specific information which is needed from the Grantee before commencing negotiations.							

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

U.S. Firm's Representations

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

1. U.S. Firm is a [check one] Corporation LLC Partnership Sole Proprietor Other:

duly organized, validly existing and in good standing under the laws of the State of: .

The U.S. Firm has all the requisite corporate power and authority to conduct its business as presently conducted, to submit this proposal, and if selected, to execute and deliver a contract to the Grantee for the performance of the USTDA Activity. The U.S. Firm is not debarred, suspended, or to the best of its knowledge or belief, proposed for debarment or ineligible for the award of contracts by any federal or state governmental agency or authority.
2. The U.S. Firm has included herewith, a copy of its Articles of Incorporation (or equivalent charter or document issued by a designated authority in accordance with applicable laws that provides information and authentication regarding the legal status of an entity) and a Certificate of Good Standing (or equivalent document) issued within 1 month of the date of signature below by the State of: .

The U.S. Firm commits to notify USTDA and the Grantee if it becomes aware of any change in its status in the state in which it is incorporated. USTDA retains the right to request an updated certificate of good standing. **(U.S. publicly traded companies need not include Articles of Incorporation or Good Standing Certificate)**
3. Neither the U.S. Firm nor any of its directors and principal officers have, within the ten-year period preceding the submission of this proposal, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a federal, state or local government contract or subcontract; violation of federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, violating federal or state criminal tax laws, or receiving stolen property.
4. Neither the U.S. Firm, nor any of its directors and principal officers, is presently indicted for, or otherwise criminally or civilly charged with, commission of any of the offenses enumerated in paragraph 3 above.
5. There are no federal or state tax liens pending against the assets, property or business of the U.S. Firm. The U.S. Firm, has not, within the three-year period preceding the submission of this proposal, been notified of any delinquent federal or state taxes in an amount that exceeds US\$3,000 for which the liability remains unsatisfied. Taxes are considered delinquent if (a) the tax liability has been fully determined, with no pending administrative or judicial appeals; and (b) a taxpayer has failed to pay the tax liability when full payment is due and required.
6. The U.S. Firm has not commenced a voluntary case or other proceeding seeking liquidation, reorganization or other relief with respect to itself of its debts under any bankruptcy, insolvency or other similar law. The U.S. Firm has not had filed against it an involuntary petition under any bankruptcy, insolvency or similar law.
7. The U.S. Firm certifies that it complies with USTDA Nationality, Source, and Origin Requirements and shall continue to comply with such requirements throughout the duration of the USTDA-funded activity. The U.S. Firm commits to notify USTDA and the Grantee if it becomes aware of any change which might affect U.S. Firm's ability to meet the USTDA Nationality, Source, and Origin Requirements.

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

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

Name		Signature	
Title		Date	
Full Legal Name of U.S. Firm			



ATTACHMENT B

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

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

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

USTDA Activity Number [To be completed by USTDA]	
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Activity Title [To be completed by USTDA]	
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Full Legal Name of U.S. Firm	
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Full Legal Name of Shareholder	
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Business Address of Shareholder (street address only)	
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Telephone number		Fax Number	
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Year Established (include any predecessor company(s) and year(s) established, if appropriate). Please attach additional pages as necessary.	
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Country of Shareholder’s Principal Place of Business	
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Please provide a list of directors and principal officers as detailed in Attachment A. Attached?	Yes
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Type of Ownership	Publicly Traded Company
	Private Company
	Other

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

If so, please provide the name of the Shareholder’s parent(s). In addition, for any parent identified, please complete Attachment B.	
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Shareholder may attach additional sheets, as necessary.



ATTACHMENT C

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

Subcontractor Information Form

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

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

Activity Title [*To be completed by USTDA*]

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

Full Legal Name of Subcontractor

Business Address of Subcontractor (street address only)

Telephone Number

Fax Number

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

Subcontractor Point of Contact

Name

Surname

Given Name

Address

Telephone

Fax

Email

Subcontractor's Representations

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

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

2. The subcontractor has all the requisite corporate power and authority to conduct its business as presently conducted, to participate in this proposal, and if the U.S. Firm is selected, to execute and deliver a subcontract to the U.S. Firm for the performance of the USTDA Activity and to perform the USTDA Activity. The subcontractor is not debarred, suspended, or to the best of its knowledge or belief, proposed for debarment or ineligible for the award of contracts by any federal or state governmental agency or authority.
3. Neither the subcontractor nor any of its directors and principal officers have, within the ten-year period preceding the submission of the Offeror's proposal, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a federal, state or local government contract or subcontract; violation of federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, violating federal or state criminal tax laws, or receiving stolen property.
4. Neither the subcontractor, nor any of its directors and principal officers, is presently indicted for, or otherwise criminally or civilly charged with, commission of any of the offenses enumerated in paragraph 2 above.
5. There are no federal or state tax liens pending against the assets, property or business of the subcontractor. The subcontractor, has not, within the three-year period preceding this RFP, been notified of any delinquent federal or state taxes in an amount that exceeds \$3,000 for which the liability remains unsatisfied. Taxes are considered delinquent if (a) the tax liability has been fully determined, with no pending administrative or judicial appeals; and (b) a taxpayer has failed to pay the tax liability when full payment is due and required.
6. The subcontractor has not commenced a voluntary case or other proceeding seeking liquidation, reorganization or other relief with respect to itself or its debts under any bankruptcy, insolvency or other similar law. The subcontractor has not had filed against it an involuntary petition under any bankruptcy, insolvency or similar law.
7. The Subcontractor certifies that it complies with the USTDA Nationality, Source, and Origin Requirements and shall continue to comply with such requirements throughout the duration of the USTDA-funded activity. The Subcontractor commits to notify USTDA, the Contractor, and the Grantee if it becomes aware of any change which might affect U.S. Firm's ability to meet the USTDA Nationality, Source, and Origin Requirements.

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

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

Name	<input type="text"/>	Signature	<input type="text"/>
Title	<input type="text"/>		
Full Legal Name of Subcontractor	<input type="text"/>	Date	<input type="text"/>