REQUEST FOR PROPOSALS

FEASIBILITY STUDY FOR THE

ROMANIA: LNG IMPORT TERMINAL PROJECT

Submission Deadline: **4:00 PM**

LOCAL TIME

JANUARY 16, 2009

Submission Place: MR. FRANCISC TOTH, GENERAL MANAGER
ROMGAZ S.A.
551130, C.I. MOTAS NR. 4
MEDIAS, JUD. SIBIU
ROMANIA

TEL: +40-269-201020
FAX: +40-269-846901

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

REQUEST FOR PROPOSALS

Section 1: INTRODUCTION

The U.S. Trade and Development Agency ("USTDA") has provided a grant to Romgaz s.a. ("Grantee") to fund a Feasibility Study ("Study") examining the technical and financial aspects of and requirements for building a Liquefied Natural Gas (LNG) Import Terminal on Romania's Black Sea Coast. 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 carry out the Feasibility Study.

1.1 BACKGROUND SUMMARY

The goal of this Study is to assist in the development of a LNG Import Terminal ("Project") on Romania's Black Sea coast. The proposed installation will augment the security and diversity of Romania's energy supply and increase the level of competition in the natural gas market. Romania's domestic gas production, although currently at approximately 12 Billion Cubic Meters (BCM) per year, is in decline and not expected to increase. Romania's current annual consumption is 17 BCM, with Gazprom supplying most of the imports, and Romanian dependence on Russian gas is expected to grow. As such, plans to diversify the country's sources of energy supply have broad political support.

A site for the Project has been identified at the Port of Constanta, the largest and deepest port in the Black Sea, with a strategic location at the mouth of the Danube River. A background Definitional Mission is provided for reference in Annex 2.

1.2 OBJECTIVE

The Study is intended to help the Grantee determine the technical and financial feasibility of Project implementation at the Port of Constanta. Toward this end, the successful Offeror will be required to:

1. assess the potential demand and markets for LNG in Romania and the region, as well as the future availability (volumes, pricing, timing and technology) of LNG supplies to the region, and to determine the size and type of the LNG import terminal to be built;
2. determine other relevant infrastructure development needs for the region, including the reconstruction and improvement of Romania's National Gas Transmission System;
3. conduct technical, economic and financial analyses in order to confirm Project feasibility, and to develop an implementation plan for the Project.

The Terms of Reference (TOR) for the Study is attached within Annex 4.

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.

COST will not be a factor in the evaluation and therefore, cost proposals should not be submitted; upon detailed evaluation of technical proposals, one firm will be selected for contract negotiations. The amount for the negotiated contract has been established by a USTDA grant of U.S. $1,061,975 dollars.

1.4 CONTRACT FUNDED BY USTDA

The negotiated contract will be funded by USTDA in accordance with the terms and conditions of its grant to the Grantee. The contract must include certain USTDA mandatory clauses relating to nationality, taxes, payment, reporting, and other matters. The USTDA nationality requirements and the USTDA mandatory clauses are attached at Annexes 3 and 4 for reference.

Section 2: INSTRUCTIONS TO PROPOSERS

2.1 PROJECT TITLE

The project is called "Romania: LNG Import Terminal Project."

2.2 DEFINITIONS

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

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

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

2.3 DEFINITIONAL MISSION REPORT

USTDA sponsored a Definitional Mission to address technical, financial, sociopolitical, environmental and other aspects of the proposed project. A copy of the Report is attached at Annex 2 for background information only.

2.4 EXAMINATION OF DOCUMENTS

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

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

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

2.5 PROJECT FUNDING SOURCE

The Feasibility Study will be funded under a grant from USTDA. The total amount of the grant is not to exceed U.S. $1,061,975 dollars.

2.6 RESPONSIBILITY FOR COSTS

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

2.7 TAXES

Offerors should submit proposals which note that in Annex 4, USTDA Mandatory Contract Provisions, USTDA funds are not to be used to pay taxes or duties under the laws of host country.

2.8 CONFIDENTIALITY

The Grantee will use its best efforts to preserve the confidentiality of any business proprietary or confidential information submitted by the Offeror, which is clearly designated as such by the Offeror.

2.9 ECONOMY OF PROPOSALS

Proposal documents should be prepared simply and economically, providing a comprehensive and concise description of the Offeror's capabilities to satisfy the requirements of the RFP. There is no necessity for expensive bindings, colored displays, or other promotional material unless such material is absolutely pertinent to the proposal. Emphasis should be placed on completeness and clarity of content.

2.10 SUBSTANTIVE PROPOSALS

The Offeror shall certify (a) that its proposal is genuine and is not made in the interest of, or on the 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 himself 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 host country for up to 20 percent of the amount of the USTDA grant. USTDA nationality requirements are detailed in Annex 3.

2.12 LANGUAGE OF PROPOSAL

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

2.13 PROPOSAL SUBMISSION REQUIREMENTS

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

MR. FRANCISC TOTH, GENERAL MANAGER
ROMGAZ S.A.
551130, C.I. MOTAS NR. 4
MEDIAS, JUD. SIBIU
ROMANIA

TEL: +40-269-201020
FAX: +40-269-846901

An Original and eight (8) copies of your proposal must be received at the above address no later than 4:00 PM, on JANUARY 16, 2009.

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.

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

2.14 PACKAGING

Each proposal must be sealed to ensure confidentiality of the information. The proposals should be individually wrapped and sealed, and labeled for content including "original" or "copy number x"; the original and eight (8) copies should be collectively wrapped and sealed, and clearly marked for content.

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

2.15 AUTHORIZED SIGNATURE

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

2.16 EFFECTIVE PERIOD OF PROPOSAL

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

2.17 EXCEPTIONS

Firms agree by their response to the RFP announcement to abide by the procedures set forth therein. Material modifications in the TOR or responsibilities of the parties will not be accepted.

Any exceptions in the proposal shall be clearly identified, and shall include the scope of such exception, and its impact, on the procurement. The Grantee shall make final determination as to the responsiveness of such exceptions and their acceptability.

2.18 OFFEROR QUALIFICATIONS

As provided in Section 3, Offerors shall submit evidence that they have relevant past experience and have previously delivered advisory and Feasibility Study services similar to those required in the TOR.

2.19 RIGHT TO REJECT PROPOSALS

The Grantee reserves the right to reject any and all proposals and to accept or reject any or all of the items in the proposal, and to award the contract in whole or in part if it is deemed in the best interest of the Grantee.

2.20 PRIME CONTRACTOR RESPONSIBILITY

Offerors have the option of subcontracting parts of the services they propose. The Offeror's proposal must include a description of any anticipated subcontracting arrangements, including the name, address, and qualifications of consultants and subcontractors. USTDA nationality provisions are set forth in detail in Annex 3. The successful Offeror shall cause appropriate provisions of its contract, including all mandatory USTDA clauses, to be inserted in all subcontracts ensuing to ensure fulfillment of all contractual provisions by subcontractors.

2.21 AWARD

An award resulting from this RFP shall be made to the best qualified Offeror, taking into consideration the evaluation factors set forth herein; however, the right is reserved to reject any and all proposals received and, in all cases, the Grantee will be the judge as to whether a proposal has or has not satisfactorily met the requirements of this RFP.

2.22 COMPLETE SERVICES

The successful Offeror shall be required to (a) furnish all supplies, supervision, transportation, and other execution accessories, services, and facilities; (b) provide and perform all necessary labor; and (c) in accordance with good technical practice, with due diligence, and in accordance with the requirements, stipulations, provisions and conditions of this RFP and the resultant contract, execute and complete all specified work to the satisfaction of the Grantee.

2.23 INVOICING AND PAYMENT

Deliverables under the contract shall be delivered on a schedule to be agreed upon in a contract with the Grantee. The Contractor may submit invoices to the designated Grantee Project Director in accordance with a schedule to be negotiated and included in the contract. Upon approval of each invoice, the Grantee will forward the invoice to USTDA which will process payment to the Contractor. All payments by USTDA under the Grant Agreement will be made in U.S. currency.

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. No cost proposal is required as the value of the USTDA grant is established at U.S. $1,061,975.

Offerors shall submit one (1) original and eight (8) copies of the proposal. Proposals received by fax cannot be accepted.

The following sections and content are required for each proposal:

Transmittal Letter,
Cover/Title Page,
Table of Contents,
Introduction and Executive Summary,
Company Information,
Organizational Structure, Management Plan, and Key Personnel,
Technical Approach and Work Plan,
Experience and Qualifications, and
Miscellaneous.

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

3.1 SECTION 1: INTRODUCTION AND EXECUTIVE SUMMARY

An Executive Summary should be prepared describing the major facts or features of the proposal, including any conclusions, assumptions, and generalized 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 SECTION 2: COMPANY INFORMATION

3.2.1 Company Profile

Provide the information listed below relative to the Offeror's firm. If the Offeror is proposing to subcontract some of the proposed work to another firm(s), similar information must be provided for each subcontractor. Offerors are requested to limit the length of the Company Profile Information to one (1) page per firm.

1. Name of firm and business address, including telephone and fax numbers.

2. Year established (include former firm names and year established, if applicable).

3. Type of ownership and parent company, if any.

4. Project Manager's name, address, telephone and fax number, if different from (1).

3.2.2 Offeror's Authorized Negotiator

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

3.2.3 Negotiation Prerequisites

1. Discuss any impact of any current or anticipated commitments which may impact the ability of the Offeror or its subcontractors to complete the Feasibility Study as proposed and within the project schedule.

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

3.3 SECTION 3: ORGANIZATIONAL STRUCTURE, MANAGEMENT, AND KEY PERSONNEL

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

Provide a listing of personnel (including subcontractors and consultants) to be engaged in the project, either U.S. or local 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 organizational relationship between the firms must be described.

A manpower schedule and the level of effort for the project period, by activities and tasks, as detailed under the 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 SECTION 4: TECHNICAL APPROACH AND WORK PLAN

Describe in detail the proposed technical approach and work plan. Discuss the project requirements as perceived by the Offeror. Include a brief narrative of 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 Technical Work Plan, including periodic reporting or review points, incremental delivery dates, and other project milestones.

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

3.5 SECTION 5: EXPERIENCE AND QUALIFICATIONS

Provide a discussion of the Offeror's experience and qualifications which are relevant to the objectives and TOR for the Feasibility Study. If a subcontractor(s) is being used, similar information must be provided for the prime and each subcontractor firm proposed for the project. Relevant experience and qualifications of key staff proposed shall be provided including letters of commitment from the individuals proposed concerning their availability for contract performance.

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

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

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

Section 4: AWARD CRITERIA

Individual proposals will be initially evaluated by a Procurement Selection Committee of representatives from the Grantee. The Committee will then conduct a final evaluation and completion of ranking of qualified Offerors, and the Grantee shall promptly 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 shall then be undertaken with the second most qualified Offeror and so forth.

The proposed work under the TOR should be provided by a team of qualified and experienced professionals representing a firm or joint venture ("Contractor") that has significant experience in the development of oil and gas sector projects in the United States and abroad.

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

1. Experience in the development of oil and gas projects in the U.S. and abroad -- 25 points
2. Experience in LNG terminal projects – 25 points
3. Experience in LNG economics and financing – 20 points
4. Experience in upgrading natural gas transmission and distribution systems -- 10 points
5. Experience in LNG production and shipping -- 10 points
6. Team organization and management plan -- 10 points

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

Price will not be a factor in contractor selection.

ANNEX 1

FEDBIZOPPS ANNOUNCEMENT

MR. FRANCISC TOTH, GENERAL MANAGER, ROMGAZ S.A., 551130, C.I. MOTAS NR. 4, MEDIAS, JUD. SIBIU, ROMANIA, TEL: +40-269-201020, FAX: +40-269-846901

CODE R – ROMANIA: LNG IMPORT TERMINAL PROJECT

POC John Kusnierek, USTDA, 1000 Wilson Boulevard, Suite 1600, Arlington, VA 22209-3901, Tel: (703) 875-4357, Fax: (703) 875-4009. Romania: LNG Import Terminal Project. The Grantee invites submission of qualifications and proposal data (collectively referred to as the "Proposal") from interested U.S. firms which are qualified on the basis of experience and capability to develop a Feasibility Study ("Study") that will assist Romgaz s.a. ("Grantee") in its planned implementation of a LNG import terminal at the Black Sea port of Constanta. The Grantee is Romania's state-owned gas exploration, production and storage company, and the largest gas producer in Europe.

The goal of this FS is to assist the development a LNG import terminal on Romania's Black Sea coast. This terminal will augment the security and diversity of Romania's energy supply and increase the level of competition in the natural gas market. Romania's domestic gas production, although currently at approximately 12 Billion Cubic Meters (BCM) per year, is in decline and not expected to increase. Romania's current annual consumption is 17 BCM, with Gazprom supplying most of the imports, and Romanian dependence on Russian gas is expected to grow. As such, plans to diversify the country's sources of energy supply have broad political support.

A site for the terminal has been identified at the Port of Constanta, the largest and deepest port in the Black Sea with a strategic location at the mouth of the Danube River. The Study is intended to help the Grantee determine the technical and financial feasibility of Project implementation at the Port of Constanta. Toward this end, the completed Study must:

1. assess the potential demand and markets for LNG in Romania and the region, as well as the future availability (volumes, pricing, timing and technology) of LNG supplies to the region, and to determine the size and type of the LNG import terminal to be built;
2. determine other relevant infrastructure development needs for the region, including the reconstruction and improvement of Romania's National Gas Transmission System;
3. conduct technical, economic and financial analyses in order to confirm Project feasibility, and to develop an implementation plan for the Project.

The U.S. firm selected will be paid in U.S. dollars from a $1,061,975 grant to the Grantee from the U.S. Trade and Development Agency (USTDA).

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

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

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

Interested U.S. firms should submit their Proposal in English directly to the Grantee by 4:00 PM, JANUARY 16, 2009 at the above address. Evaluation criteria for the Proposal are included in the RFP. Price will not be a factor in contractor selection, and therefore, cost proposals should NOT be submitted. The Grantee reserves the right to reject any and/or all Proposals. The Grantee also reserves the right to contract with the selected firm for subsequent work related to the project. The Grantee is not bound to pay for any costs associated with the preparation and submission of Proposals.

ANNEX 2

BACKGROUND DEFINITIONAL MISSION REPORT

DEFINITIONAL MISSION REPORT

LNG IMPORT TERMINAL ON THE BLACK SEA COAST OF ROMANIA

(USTDA CONTRACT: TDA-CO2008810006)

Submitted to:

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

Submitted by:

RKR Enterprises
64-85 Booth Street, # 2F
Rego Park, New York 11374

October 30, 2008

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.
Mailing and Delivery Address: 1000 Wilson Boulevard, Suite 1600, Arlington, VA 22209-3901
Phone: 703-875-4357. Fax: 703-875-4009. Web site: www.ustda.gov . Email: info@ustda.gov

The U.S. Trade and Development Agency

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

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

Mailing and Delivery Address: 1000 Wilson Boulevard, Suite 1600, Arlington, VA 22209-3901
Phone: 703–875–4357 • **Fax:** 703–875–4009 • **Web site:** www.ustda.gov • **email:** info@ustda.gov

DEFINITIONAL MISSION REPORT

LNG IMPORT TERMINAL ON THE BLACK SEA COAST OF ROMANIA

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DEFINITIONAL MISSION REPORT

LNG IMPORT TERMINAL ON THE BLACK SEA COAST OF ROMANIA

A. EXECUTIVE SUMMARY

The U.S. Trade and Development Agency (USTDA) funded a definitional mission (DM) to assess if a feasibility study grant to the Government of Romania (GOR) may be considered for a liquefied natural gas (LNG) import terminal and/or a liquefied petroleum gas (LPG) terminal project on the Black Sea Coast. The mission also involved the assessment of a project for constructing an import terminal for LNG regasification in the Baltic Sea Coast of Lithuania, which is reported in a separate document.

The construction and operation of the LNG terminal on the Black Sea Coast will provide an alternative source of natural gas to Romania and the Balkan region which are increasingly dependent on the supply of Russian gas by pipeline from the East. The Romanian LNG project becomes more critical in light of the latest events in the Republic of Georgia, which is a natural corridor of alternative supplies of oil and gas from the Caspian Sea into Europe. Romania and the region, and Europe at large, anticipate a substantial increase in their demands for imported natural gas in the future. In addition to improving the energy security of the region, the Black Sea LNG project will help the region to meet its growing need for economically and environmentally acceptable sources of energy in the short- and medium-terms. Although it is difficult to estimate the size and cost of the LNG terminal at this stage of planning, the minimal investment need of the project would be around $1 billion including the costs of project financing, permitting and approval, insurance, studies, and startup. The project is expected to generate interest from the private sector with the government acting as the initial sponsor of the project.

The capital cost of the project is roughly estimated to be around $750 million. The U.S. export potential in the project is estimated to range from $75 to 150 million. This potential might be higher depending upon how the LNG value chain is developed for the project. The participation of U.S. firms in the feasibility study of the project would enable the U.S. export potential to be materialized if the project is implemented.

GOR has appointed ROMGAZ, as the beneficiary of the assistance from USTDA. The terms of reference (TOR) for the feasibility study, as per Section L below, establish a budget estimate of $1,061,975. The feasibility study can be completed within 12 months after the commencement of work. USTDA is recommended to favorably consider a grant for the performance of the TOR as proposed in this report.

As per the requirements of law in Romania, there will have to be a competition to choose the company to perform the feasibility study. This competition may follow USTDA's procedure for advertising a request for U.S. firms to submit proposals to the Grantee.

B. PROJECT DESCRIPTION

B.1 INTRODUCTION

The U.S. Trade and Development Agency (USTDA) funded a definitional mission (DM) to assess if a feasibility study grant may be considered for Romania's project to build a liquefied natural gas (LNG) import terminal on its Black Sea coastline, possibly in the Port of Constantza. The Ministry of Economy and Finance (MoEF) in the Government of Romania (GOR) had requested USTDA's grant for this project. As per the request of MoEF, the import terminal for receiving and regasifying LNG was required "…as a strategic measure to ensure the diversification and the security of natural gas supply" to the country. This request had designated ROMGAZ, the state-owned company for exploration, production and storage of natural gas, as the potential beneficiary of the feasibility study grant requested from USTDA.

The DM also assessed the need for Romania building a liquefied petroleum gas (LPG) import terminal and a project sponsored by the Government of Lithuania to build a regional LNG import terminal on the Baltic Coast.

B.2 SUMMARY OF THE VISIT TO ROMANIA

The DM assignment on Romania included a visit to the cities of Bucharest and Medias and the Port of Constantza during the week of April 14 to 18, 2008.

The mission was started with a meeting at the Economics Section in the U.S. Embassy in Bucharest, which had provided assistance in making the initial contacts at MoEF and to schedule meetings with other government agencies. The visit to Romania was concluded with a briefing of these Embassy personnel by the DM team on the outcome of the mission. The meetings with GOR authorities were also attended by some of the U.S. Embassy personnel who had attended the above mentioned meetings at the Embassy.

Besides meeting with MoEF and ROMGAZ, the sponsors of Romania's LNG import terminal project, the DM team met with the Romanian Energy Regulatory Authority (ANRE) and the following key representatives of Romania's gas industry:

- PETROM, supplier of natural gas and LPG produced at its oil fields and refineries;
- ELCEN, operator of the main gas-fired combined heat and power (CHP) plants;
- Gaz de France, distributor of natural gas in the southern part of Romania; and
- ROMPETROL, supplier of LPG produced at its refineries.

The DM team also met with representatives of TRANSGAZ, the state-owned operator of the pipeline networks for transmitting and transiting natural gas, and of Raiffesen Capital & Investment, which monitors business developments in Romania's energy sector.

Details of the meetings held in Romania are given in the following table:

Meeting Date (Place)	**Key Personnel at the Meetings**		
Monday April 14, 2008 (Bucharest)	AM	-	Mr. Blair LaBarge, Economic Counselor, US Embassy, Bucharest, accompanied by Messrs. Benjamin Rockwell and Justin Berg, outgoing and incoming Economics Officer respectively, and Ms. Dana Stanescu, Economic Specialist, Economic Section.
		-	Mr. Corneliu Condrea, Deputy General Director, Energy Policy General Division, Ministry of Economy and Finance (MoEF)
	PM	-	Horia Marius Caliminte, Vice-President Gas Natural, Romanian Energy Regulatory Authority (ANRE), accompanied by Mirela Plesca, Director of Strategy and Programs Division, Florin Tobescu, Head of European Affairs Unit, and Gheorghe Buliga, Counselor
Tuesday April 15, 2008 (Bucharest)	AM	-	Mr. Richard Krainer, Marketing Director Supply & Logistics Department, PETROM accompanied by Mr. Marian Dragos Manescu, LPG Storages Manager
		-	Mr. Ion Marcu, General Manager and Member of the Board, S.C. Electrocentrale Bucuresti (ELCEN) accompanied by Ms. Irina Duica, Commercial Director
	PM	-	Tanguy Moulin-Fournier, Director, Gaz de France Romania
Wednesday, April 16, 2008 (Medias)	AM	-	Travel to Medias
	PM	-	Mr. Lucian Adrian Stancu, Director General Adjunct, ROMGAZ, accompanied by Mr. Radu Gheorghe, Manager Development Division and Mr. Victor Cristian Serban, Head of International Cooperation Department. Attending the meeting were also Mr. Tomos Ioan, Director, Development Division, and Mr. Cosma Emil Florin, Director, Operations Division from TRANSGAZ
Thursday, April 17, 2008 (Constantza)	AM	-	Travel to Constantza
	PM	-	Ms. Adina Baz, Director, Port Domains Division, Maritime Ports Administration (Constantza Port) accompanied by Ms. Nicoleta Dogaru, Head of Development Department, Mr. Teodor Patrichi, Terminal Representative and Ms. Luiza Cincu, Protocol Organizer
Friday April 18, 2008 (Bucharest)	AM	-	Mr. Mihail Sebastian Duta, Sales & Marketing Manager, ROMPETROL
		-	Mr. Oleg Galbur, Head of Research, Raiffeisen Capital & Investment, accompanied by Ms. Iuliana Simona Mocanu, Research Analyst
		-	Mr. Corneliu Condrea, Deputy General Director, Energy Policy General Division, Ministry of Economy and Finance, accompanied by Mr. Victor Cristian Serban, Head of the International Cooperation Department, ROMGAZ, and Mr. Cornel Zeveleanu, Expert and Mr. Liviu Stoican, Expert, from the Energy Policy General Division of the Ministry
	PM	-	Harald Kraft, Development Director, PETROM
		-	Mr. Blair LaBarge, Economic Counselor, US Embassy, Bucharest accompanied by MR. Justin Berg, Economics Officer and Ms. Dana Stanescu, Economic Specialist, Economic Section

B.3 FINDINGS OF THE MISSION

B.3.1 Energy and Natural Gas Situation

Overview

Romania has a National Energy Policy approved in 2007 for the period going through 2020, but it seems that the policy is being implemented slowly and in a piecemeal fashion. Privatization of the energy industry is basically on hold after initial efforts that were made when the country was being accepted in the European Union (EU). The price controls imposed by the GOR on energy are still in force so that prices for the consumer are not fully liberalized and, consequently, the industry is not competitive. State owned companies still dominate the gas sector and since the country produces natural gas and the GOR enforces price caps on the domestic producers, retail prices are below international levels and are not subject to the fluctuations common in Western Europe.

In the recent past, GDP grew at an annual rate of 6% on average while the domestic electricity consumption grew at around only 2.6%. Through 2011, the forecasted GDP growth rate is around 5% per year while the growth of domestic consumption of electricity is forecasted at 2.7% per year. (The projected increase of electricity generation would be higher, around 3% per year, as Romania is expected to increase the power it exports to its neighboring countries). The rates of increase for GDP and of domestic electricity consumption may be closer to each other in the medium- and long-terms.

The greatest use of natural gas for energy generation is presently at combined heat and power (CHP) plants that are operated by a state-owned company. Power generation at these facilities depends upon seasonal and climatic factors. For example, the use of natural gas in 2007 is reported to have been significantly lower than in previous years due to the "warmer" winter of that year.

Natural gas consumption is between 17 and 18 BCM/year but given the reduction in domestic gas production and future increase in demand, imports will increase from around 31% of consumption last year to 45% in 2015. The energy sector strategy of Romania foresees natural gas imports of 8.5 BCM of the 19.1 BCM consumption for that year given a forecast of 1.2% annual average growth for the period through 2015. The World Bank forecasts for Romania 25.6 BCM of consumption for 2025 with a supply gap of 18.3 BCM, meaning a whopping 72% import dependency forecasted for that year.

Energy

Romania generates 69 trillion watt-hours (TWh) of electricity and thermal power per year, imports around 2.3 TWh of electricity and exports around 5.2 TWh. Electricity generation is expected to increase at an average of 3% per year until 2012. From the electricity currently consumed per year, 69% is by the industrial sector (lately growing at an average of 1.6% per year) and 16% by households (lately growing at an average of 3.3% per year).

Most of the future increase in electricity generation is scheduled to come from coal which now generates 37.3% of the total and is expected to generate 44% by 2012. (GOR's current and traditional subsidies to coal are still allowed through 2010.) Nuclear generated electricity from one plant in Cernavoda with 706 MW of installed capacity as well as the installed hydroelectric power generation capacity will remain the same in the foreseeable future. Therefore, their relative shares of the total generation will come down from 27.6% to 24.4% and from 16.9% to 14.9% respectively. (Total hydroelectric power potential is estimated to be about 40 TWh per year while the installed capacity can realize only 12 TWh and generated less than 9 TWh). Romania is also known to have a large potential for generating wind power, which has not yet been exploited.

Power plants using natural gas mostly as fuel contribute to the remaining generation of energy in Romania and their share of total generation is expected to reduce from 18% today to 16.6% in 2012. A major user of natural gas for energy generation (electricity and thermal power) is the state-owned *Termoelectrica* for which gas is purchased by its affiliate company *Electrocentrale Bucharesti* (ELCEN). This company also supplies heat and electricity to the counties of Bucharest, Constantza, and Mures.

Electricity transmission is under the control of GOR but the system works well and the operations have been profitable. Raiffeisen Capital & Investment, an Austrian investment bank very active in the energy sector of the region, keeps a BUY recommendation for the shares available in the markets for *Transelectrica*, the partially privatized state-controlled electricity transmission monopoly company in Romania. Tariffs are calculated following the revenue cap methodology adjusted with CPI indexes and efficiency factors. Since electricity consumption is expected to follow GDP growth rates, similar to other countries, future business growth seems to be assured in Romania.

Transmission tariffs are still well below the EU average (if compared for example to Spain and Belgium, Romania's tariffs are less than half) and based on regional plans, opportunities will increase with a truly free energy trade. There are reports of an initiative being taken to establish first a national and later a regional power exchange in Bucharest to take advantage of the existing power grids in Romania and interconnections to the power grids of neighboring countries. This will increase potential for trade in electricity and improve upon the deficit of power generation capacities in the Balkan region.

Natural Gas Situation

Romania has the largest natural gas market in Central and Eastern Europe and as it was the first country in the region to use natural gas for industrial purposes, the industry has a long history and consequently ample experience in how to handle gas. Natural gas markets reached record dimensions during the early 1980's as result of application of governmental policies oriented towards eliminating energy imports. Application of these policies led to intensive exploitation of domestic resources, causing depletion of reserves and production decline and consequently dependence on imports, completely opposite to the original intention. In 2005, from the total consumption of 17.6 BCM, natural gas internal production represented approximately 12.4 BCM, and the difference, 5.2 BCM, was imported from their only supplier, the Russian Federation.

The natural gas sector in Romania may be summarised as follows:

- ROMGAZ and PETROM are the main producers of natural gas in Romania.
- ROMGAZ, Depomures and Amgaz control the storage of natural gas.
- TRANSGAZ has the monopoly for transmitting natural gas within the country and it is designated as the market operator for making the users share between domestic and imported gas; TRANSGAS also transits imported natural gas to other countries.
- Distrigaz Sud and E.ON Gaz are the main importers and distributors of natural gas;
- ELCEN is also a significant importer of natural gas for providing heat and power;
- All of the above companies are suppliers to the gas market in addition to Congaz and Amromco Energy.

In order to complete liberalization of the natural gas market of Romania, the price of gas produced internally should equal the import gas price at international market levels. The gas market should also provide undiscriminating access of all customers to the internal production of natural gas resources. Currently, natural gas supply to customers is carried out in a mixture, called Natural Gas Mixture, constituting of internal production quantities and import quantities. This mixture structure is determined on a monthly basis by TRANSGAZ under its role as the market operator to cover the entire demand.

The market operator has the obligation to observe the compliance with the legal mandate to use the approved natural gas mixture by all licensed operators and eligible customers in the natural gas sector. The percentages of internal production and import quantities in the natural gas mixture are the same for all customers, including local producers of natural gas, which for their own use have to obtain, and pay, the approved proportion of imports at import prices.

According to EU requirements, domestically produced gas prices have to be aligned with prevailing prices in international markets according to the current deadline for such an alignment, which is the end of 2008. Fearful of continuously raising prices and their impact to the economy and the consumers, GOR is negotiating for a postponement with EU authorities. This is obviously in detriment of local producers who are paid cheaper regulated prices for their domestic gas production when compared to international prices. The more this situation is kept enforced, domestic production might accelerate its decline, like it is happening in other parts of the world where prices are not allowed to approach international levels. Obviously it is sending the wrong signal to the current and potential operators of Romania's gas market since the capital for new investments, and even the funds required to maintain production levels, are diverted to more profitable opportunities somewhere else. This certainly does not help the decisions needed to be taken concerning present and future investments to maintain operations, less of course to increasing production levels and/or to aggressively exploring for new gas reserves.

In any case, since the natural gas mixture reflects the actual proportion of import quantities, its effect on prices will be a slow natural convergence towards the international price given that the proportion of imports will continue going up. The

current import price is at $372/1,000 cubic meter, based on a weighted-average of the import contracts in place for 13 companies. The prices are determined by formulas based on published quotations for prices of fuel oil (1% sulfur max.) and gasoline prices in the Mediterranean Sea (1/3 and 2/3 respectively). The expectations are that that price of imported gas will reach $400 by the end of the year. Current internal regulated price was reported by ANRE, the regulatory agency, to be $180/1,000 cubic meters.

ROMGAZ and PETROM produce around 6 BCM per year of natural gas each. ROMGAZ's production has consistently declined from 22.2 BCM per year 20 years ago; PETROM's production has declined from 7.9 BCM during the same period of time. The consumption of natural gas is distributed as follows:

- 41% for the industrial sector,
- 29% for energy production,
- 16% for households.

Overall, the 1.2 percent average annual growth of gas consumption through 2015 mentioned above in this section will be mainly due to an increase in expected industrial output. However, some of these consumers might decrease their gas usage by changing to more energy-efficient technological equipment. Some increase in household consumption is also anticipated because of expansion of gas distribution networks to rural areas, a rise in sales of gas-driven household appliances and increased purchasing power of consumers which normally leads to higher energy consumption.

The current reserves of natural gas in Romania are estimated to be around 185 BCM but these reserves are expected to decrease to 105 BCM by the end of 2015. The Energy Strategy mentions the need to invest 430 million Euros (EUR) to maintain an adequate program of exploration to find new gas reserves. From a total of 31 billion EUR that the Strategy provides for the Energy Sector in general, 1.5 billion EUR are related to the gas industry which takes into account consumption forecasts, current status of existing infrastructure, environmental protection needs and corresponding applicable EU directives. They are oriented mainly to increasing underground storage capacity, discovery of new reserves and rehabilitating the transmission and distribution networks.

There are eight existing underground storage facilities in the country with a nominal capacity of 3.8 BCM in old depleted gas fields, but operating capacity seems to be at around 3 BCM. ROMGAZ controls six facilities totaling 2.6 BCM (with plans to be expanded to 3.9 in the following years with an investment of 180 million EUR) and the other two are in joint ventures with Depomures and Amgaz. By 2012 the country should then have a total of 5.1 BCM capacity of underground storage.

TRANSGAZ is the state controlled but partially privatized (see below for details) transmission monopolistic company with a 30 year concession until 2032. (The company may not be completely privatized as of now and perhaps even in the long term). The company operates the domestic system with a nominal capacity of 40 BCM per year.

TRANSGAZ also operates the international transit lines going through Romania to supply Bulgaria (one line) and Turkey and Greece (two lines). These lines run parallel to each other entering and leaving the country in the same points and cross the eastern region of Dobrogea. (Close to 24 BCM per year is reported as the capacity reserved for transit volumes). In any case, all the supply originates from the Russian Federation. TRNSGAZ has been traditionally paid with natural gas for its transit fees. In addition to these volumes of gas, the company is allowed to trade in natural gas necessary to keep the balance of the gas transmission system and its operational parameters.

Raiffeissen Capital & Investment also keeps a BUY recommendation in the market for the shares controlled by the public as a result of the initial IPO in November last year and the following free float issue of shares which reduced GOR's participation down to 75%. Regulated transmission tariffs are based on a revenue cap methodology which include a stable revenue stream and a healthy cash flow with a regulated return on assets (currently 7.88%), covering operating expenses and depreciation and recognizing investments made during the corresponding regulatory period.

However, the existing pipelines are mostly outdated and most equipment and installations are more than 25 years old. Close to 25% of the pipelines has been recently repaired and GOR's strategy includes a program of investments to continue the upgrade of the system in the short-term. This program includes an upgrade of the domestic grid (for which 260 million EUR are assigned), the interconnections through which imports are brought in (25 million EUR assigned) and the transit lines in their eastern region (20 million EUR).

With the goal of diversifying the supply of imported gas by accessing other sources from Western Europe and interconnecting with other transport systems, several projects are under various levels of implementation like,

- finalizing the interconnection with Hungary (Szeged in Hungary to Arad in Romania) which is connected to the Austrian system
- building a new northern interconnection with the Ukranian grid (Cernauti in Ukraine to Siret in Romania)
- building an interconnection with the Bulgarian network (Ruse in Bulgaria to Giurgiu in Romania).

But these last mentioned investments do not solve the situation of dependency from Russian supplies. That is why TRANSGAZ is a partner in the Nabucco Project to bring Caspian Sea supplies into Central Europe and consequently lower the regional dependency which all of the partner countries are subject to.

B.3.2 LNG IMPORT TERMINAL ON ROMANIA'S BLACK SEA COASTLINE

Consistent with the EU's policies being implemented to assure adequate energy supply into the future, Romania has to look at a broader and expanded natural gas supply picture to diversify its inevitable increasing import gas needs beyond the gas sector projects described above. Its strategic location in the European side of the Black Sea and its

potential transit situation make it a natural recipient of natural gas sources brought from new supply areas through several projects under consideration at this point in time.

Currently several alternatives for diversifying gas supply are being considered such as:

- Nabucco Pipeline from the Caspian Sea to Central Europe mentioned above (where TRANSGAZ is a 20% partner),
- White Stream Pipeline by land and under sea from Georgia via Ukraine, and
- Gazprom's South Stream Project underneath the Black Sea from Russia to Bulgaria,

The last alternative (South Stream Project) will of course not solve the basic problem of dependency on Russian gas supplies. The limitations on Russian gas meeting the growing needs of Europe should also be noted. The Russian business daily Kommersant has commented that the gas volumes that Gazprom can deliver to Europe is dwindling and hence cannot be a real alternative to other projects like Nabucco. The Russian gas monopoly's statistics forecast that gas output at its already greatly depleted deposits will dwindle from an expected 602 BCM in 2010 to 412 billion in 2015 and to 192 billion in 2020. To fulfill its contracts, Gazprom would have to commission new deposits with a total capacity of at least 215-300 BCM a year by 2015 and around 800 billion by 2030.

Gazprom is reported to have said that the company would supply one-third of Europe's natural gas by 2020, but others believe that Gazprom's supply to Europe will go down from the current level of close to 26% to not more than 22% of Europe's gas needs. Gazprom's projects to improve gas supplies to Europe will not provide for increased gas consumption, but will only redistribute the flows, forcing Ukraine and several other countries to buy gas from its subsidiaries in Germany, Austria and other European states.

There are also limitations on the availability of natural gas from Central Asia to Europe. Azerbaijan is unable to export more than 6-8 BCM of natural gas annually, whereas the 3,300 kilometers Nabucco will need at least 30 BCM per year. Turkmenistan has yet to agree with Azerbaijan on the division of the Caspian Sea resources, develop its western deposits, and build more than 1,000 kilometers of pipelines from its eastern gas fields. Turkmenistan has also to meet the criteria to become a partner in the Nabucco project.

In the meantime, new activity is surfacing on the Nabucco project. Recent key talks in Turkey are scheduled as part of efforts to breathe political energy into this long-awaited alternative natural gas scheme prompted by the latest Georgia-Russia crisis. These talks will take place as the Hungarian government is preparing to host a natural gas pipeline summit in Budapest on January 26-27, 2009. Hungary is inviting the governments of Austria, Romania, Bulgaria, Turkey, and Germany as potential recipients of the gas; Azerbaijan, Turkmenistan, Egypt and Iraq as potential suppliers; and Georgia as a transit country. Also invited are EU energy authorities, the Czech Republic as the holder of the EU's rotating term president at the time, the U.S., and the members of the international Nabucco consortium (OMV of Austria, MOL of Hungary, Transgaz of Romania, Bulgargaz of Bulgaria, BOTAS of Turkey and RWE of Germany).

A LNG receiving terminal on the Black Sea coastline is an attractive and environmentally friendly alternative to and would be a complementary option to the Nabucco project for Romania and other countries in the region to diminish their dependency on Russian gas. LNG could be received not only from traditional lands of LNG supply like Algeria, Egypt, and Qatar but even further away from Norway, Nigeria, or Trinidad and Tobago.

Geopolitical complications may interfere with the project, however. During the visit to Romania, the DM team heard doubts on the concept of LNG reaching the Black Sea because of Turkey's opposition to LNG tanker traffic through its already congested shipping lanes and unknown potential risks on safety and security in the Bosporus Strait. The possibility of a LNG liquefaction plant being built across the Black Sea in Georgia has the advantage of the LNG tankers not having to cross the Bosporus.

In any case, the advantages of importing LNG are well known. Several LNG import terminal projects are under construction or proposed in Europe and other parts of the world. Countries where LNG import terminals have been under operation have benefited not only from the point of view of the diversification of gas supplies but also from the resultant dynamics and flexibility in their energy and natural gas markets.

Given the tendency in the market to look upon LNG as the magical solution to gas supply problems, other competing projects for the Romania LNG project should be examined as well. For example, Southeastern Europe can be supplied from a new LNG terminal on the Adriatic Sea coastline of Croatia, or existing LNG terminals in northern Italy can be expanded to supply natural gas to other countries. (A Greenfield project of this scale of investment and level of complexity in Romania could be more expensive than expanding an existing terminal and then use or expand the existing pipeline grid.) Another possibility is to work on a more efficient use of spare capacity that can be accessed like the one reported available to the south of the area at the Revithoussa terminal in Greece. A comprehensive feasibility study of Romania's LNG project will shed light on these and other concerns such as environmental issues, permits and approvals, financing tools, location topography and security and the needed risk assessment analysis.

LNG will not necessarily be cheaper than piped gas. Lately, there is a tendency to a convergence of LNG prices in international markets and suppliers are looking for higher netbacks when going to possible alternate markets. In the U.S. or East Asia, spot transactions have allowed both the suppliers and buyers to take better advantage of available cargoes. In any case, this DM has not gone into this subject at length since the main purpose of GOR considering a LNG terminal is reported to be improving the diversification of gas supplies for energy security reasons and not pricing.

Some opinions were heard during the visit to Bucharest that, given the still unused installed capacity to import additional quantities via existing pipelines, piped gas would always be the best priced alternative. This could work in both directions since without alternative supply Gazprom could even demand higher prices approaching those of LNG, which can be the alternative to cover marginal volumes or seasonal peak demand, and in any case it can be used for negotiation with Gazprom.

It is only a matter of time for all of the proposed facilities to be built - LNG import terminal and pipelines under the Nabucco project. Production in Western Europe is below 270 BCM per year now and imports are around 160 BCM per year. If Western Europe's production continues to decline as expected and demand keeps on growing as forecasted, import requirements will jump to 250 BCM in a few years and could go to over 450 BCM by 2020 as per the World Bank forecasts.

Europe will not only be needing increased quantities via pipelines from current areas like North Sea and Siberia and LNG supplies from suppliers as those mentioned before, but will resort to new ones with a variety of sources in the Arctic, Caspian Sea, Middle East and West Africa. To meet its future import requirements, both new pipelines and LNG projects will have to be developed to close the supply-demand gap.

The DM team visited the Port of Constantza in Romania, which was identified by the MoEF's request for USTDA grant as the location for the terminal. The port is already the largest and deepest port in the Black Sea with a strategic location close to the mouth of the Danube for transportation into Central Europe, recently enhanced by the man-made canal built directly from the river to the port which considerably reduces transfers times.

The area currently assigned as the location within the Port for the proposed LNG import terminal was shown to the team first on maps and later in-situ in an extended visit to the different facilities the port encompasses. This location seems to have been selected not necessarily on specific technical grounds for the project but on the availability of all sort of infrastructure, utilities, road systems, personnel housing, etc. which the port already has and the experience and apparent adequacy that the location provides.

Based on observation made during a short visit, the port location seems to be appropriate. However, technical considerations for selecting the site would have to be part of the feasibility study of the LNG terminal project, such as:

- geological and topographical details;
- weather patterns and marine currents and tides;
- shipping traffic and suitability of tugs and pilots;
- availability of navigational aids and emergency services;
- onshore access, utilities and site preparation requirements; and
- environmental issues and safety and security aspects; perception of risks; etc.

An important aspect of the selection of the site for LNG terminal would be the needs for connecting the terminal to and upgrading the existing pipeline grids.

B.3/3 LPG SITUATION AND AN LPG BLACK SEA IMPORT TERMINAL

LPG consumption in Romania has been growing consistently and even though available statistics do not necessarily concur with each other, the market should presently be above 500,000 metric tons (MT) per year (mainly Propane). The bottled retail segment is

responsible for approximately 250,000 MT but the potential for this market to increase is very good in the agricultural and industrial sectors and it is reported to be forecasted to grow at around 10% per year in the near future.

Another segment with high potential for growth is the automotive fuel, like in its neighbor Bulgaria, now at 150,000 to 200,000 MT/year. However, reports are that the market is expected to grow at a healthy rate of around 20% per year depending upon certain governmental policies to promote its use.

LPG can also be used for peak shaving emergency needs and this potential use has been mentioned in some quarters. However energy to be obtained from this source is a lot more expensive than that produced by coal or natural gas if only compared to their corresponding net calorific content. Costs will increase further when adding investments to be made to apply this alternative.

There are ten refineries in the country and LPG is produced in five of them. LPG is also recovered in somewhat limited amounts from natural gas processing but the total production at around 240,000 MT/year does not cover the demand. The deficit is covered by imports and some volumes are exported to Bulgaria. ROMPETROL (a 75% stake of which was recently sold to KazMunaiGas from Kazakhstan) produces the largest share of around 200,000 MT/year.

Market development to cover future demand might require the building of a LPG import terminal in the Black Sea in the future. Technologies, supplying markets and dynamics, professional experiences needed, handling facilities, equipment, operating procedures, pricing, size of cargoes and stored volumes, delivery methods, etc. are different for LPG and LNG import terminals.

The need or future potential for an LPG import terminal in the Black Sea will have to be determined on its own merits and independently from an LNG regasification terminal as the latter has been discussed in the preceding paragraphs. It should be noted that ROMPETROL has been reported to be close to making a decision regarding new LPG import facilities at their Petromidia refinery in the Black Sea. The Austrian firm, OMV, which operates PETROM also has plans to increase the production of LPG in Romania. In discussions with ROMGAZ and MoEF, it was decided not to pursue the original request for USTDA assistance in the construction of a LPG import terminal.

C. SPONSOR'S CAPABILITIES AND COMMITMENT

Romania has a long history and experience in all facets of its very diversified energy industry, from prospecting and production, building and maintaining, to storing and distributing all sources of energy. For example, it is the only country in Eastern Europe to have a nuclear power plant based on Western technology, which incorporates a high percentage of North American equipment. Romania has its own uranium deposits as well as enriched uranium and heavy water production facilities.

Oil refining in Romania has a long tradition that goes back to the 19th century when the first refinery in Europe was commissioned in Ploiesti in 1857. This 150 year long tradition is shown in the diversity and sophistication of the products that Romanian refineries can put in the markets as reflected in the Nelson complexity factor of large refineries. All the refineries produce at least some specialty products directed to very specific international markets and users.

The natural gas industry also has a 100-year old tradition. GOR decided to reorganize the gas sector in 2000. The shares held by the former Romgaz in its subsidiaries were transferred to the Ministry of Industry and Trade and the following independent companies were established:

- Transgaz, in charge with the transportation of natural gas from the producers to the distribution companies;
- Exprogaz, a natural gas exploration, production and storage company, incorporating the activities of the former Exprogaz Medias and Exprogaz Targu Mures:
- Depogaz, a natural gas exploration, production and storage company, the successor entity of Exprogaz Ploiesti;
- Distrigaz Nord, a gas distribution company covering the northern half of the country;
- Distrigaz Sud, a gas distribution company covering the southern half of the country.

In 2001 GOR further reorganized the sector and merged Exprogaz and Depogaz into the now existing ROMGAZ. Since then, the company has been embarked in a continuous investment program to improve and expand its gas storage and storage facilities.

It has been recently reported that ROMGAZ plans to spend around 220 million EUR annually in the four coming years to explore and develop new gas resources in the country either alone or in partnership with foreign companies in eight concession areas. ROMGAZ is in the process of finalizing a feasibility study for doubling the storage capacity of its gas depot in the western town of Sarmaselu and is also preparing a $2 million feasibility study for a project to build another gas depot in the northeastern town of Margineni. This last study is expected to be finalized before the end of 2008. ROMGAZ might form a joint venture for the new gas storage facility with Gazprom, with whom discussions have already started.

State-owned energy companies in Romania in general, and ROMGAZ in particular, are entities that have enough experienced personnel, adequate resources and on-going widely recognized operations that allow them to be capable of performing the necessary duties to take advantage of USTDA's potential technical assistance.

ROMGAZ has the responsibility of performing the national strategy within the natural gas activity and is also responsible for the production, geological research for the discovery of natural gas reserves and storage of natural gas in the country. Although natural gas production has declined, consumption has rebounded and domestic production of gas represents a significant primary energy source for Romania.

At present, ROMGAZ has its commercial natural gas reserves in an advanced degree of exploitation and maturity, most of them having an actual recovery factor of more than 65% and the focus of their capital investment program is on:

- increasing the volume of underground storage capacity,
- discovering new reserves to supply the growing market as well as rehabilitating old fields, and
- ensuring the gas quality as per EU regulations by treating the resource by means of state-of-the art technology.

The level of technical preparedness and professional achievement of ROMGAZ shows in the results of its work. Furthermore, the company has an extensive program of continuous general educational and technical training for its personnel and gets involved in a variety of social activities for the good of the communities where it performs gas production.

Its most recent Annual Report (2006) shows good profitability and adequate use of resources at its disposal taking advantage of a period of economic stability with multiple opportunities of development. Its internal resources are the main source of investment financing, therefore the debt equity ratio is very low as reflected in its financial statements (To give an idea, Total liabilities/Shareholders' Equity is 0.162, where Current liabilities/Shareholders' Equity is 0.093 and Non-current liabilities/ Shareholders' Equity is 0.069). Also, environmental protection and social responsibility issues in their broadest interpretations are trademarks in the published report.

The GOR has apparently decided that some strategic business entities, such as ROMGAZ and TRANSGAZ, will remain within the control of the State and this could be the idea behind the LNG import terminal. Given its past history, GOR has enough experience in managing State-owned enterprises, even though it may not be the ideal scheme for this type of investment and further studies and decisions will have to be made in this respect.

If the GOR is presently looking at keeping the ownership control of the LNG terminal, the project could be put in the hands of qualified private investors. The other links in the LNG value chain more than likely will be in the hands of private enterprise. The sponsorship or ownership of the project would have to be discussed after the project has proven its feasibility, or at some point in time during its implementation, or at any late stage during its construction or its operation.

D. IMPLEMENTATION FINANCING

D.1 OVERVIEW

Given the extent of investment and the expertise required to develop the Romanian LNG import terminal as part of a future value chain for LNG, the project will more than likely involve a group of private investors. Representatives of the gas industry from Qatar have visited Romania and the port of Constantza. The Government of Romania has also

contacted Egypt for LNG supplies. While there was no indication of private sector interest in the project, Gaz de France, a developer of LNG projects in the region is already present in Romania as a major distributor of natural gas. Considering the present high international prices for energy resources and the infrastructure needed to handle these resources, sophisticated financial plans will be needed to implement the project, which will have to reflect on the size, economic viability and financial risks of the project. Because of the risk associated with the project, the Government of Romania may have to share ownership of the terminal with the private investors, which indicates that public and multinational financing might also be accessible to the project.

Since markets and, consequently projects in the energy sector are influenced by a wide range of factors, some unpredictable at this time, implementation financing will have to be worked on as the project progresses. The feasibility study of the project will have to test different scenarios and examine how robust the project is in various combinations of the influencing factors to determine its sensitivity and viability.

For example, with LNG pricing being a major factor determining the viability of the project, there has been an increasing use of spot transactions of LNG versus traditional long-term supply contracts. The proliferation of diverse pricing formulae has also added an intrinsic dynamism to the markets which now demand more extensive and complex negotiations and perhaps more partners and stakeholders in the project.

D.2 OVERALL ESTIMATE OF PROJECT COST

Romania's imports of natural gas are expected to become nearly 8.5 BCM/year by 2015. At that time, the total consumption of natural gas in the country would be slightly below 20 BCM/year. One can expect the Romania LNG project to first consider a throughput capacity of around 25 percent of total consumption. This assumption yields 5 BCM/year as the starting capacity of the terminal. With a high utilization of this starting terminal capacity, Romania will be able to reduce its reliance on piped natural gas by 50 percent and substantially increase the security of its imported gas supplies.

For lack of design information on the Romania LNG project, only a rough order-of-magnitude estimate of the capital cost of the Romania LNG project can be made by using cost information available on other LNG projects. The Aliaga LNG import terminal in Turkey (capacity 6 BCM/year) was completed a couple of years ago at a reported project cost of nearly $600 million. The project cost may include non-capital investment.

The GATE LNG terminal, which is under construction in Rotterdam, was designed to start-up with a capacity of 9 BCM per year and to have a potential for expanding the capacity to 16 BCM per year. The engineering, procurement, and construction (EPC) cost (capital cost) is presently estimated to be around $900 million (based on unit cost of $100 million per BCM per year). The total project cost (investment need) is expected to be one-third more than the EPC cost estimate -- 800 MEUR or nearly $1.2 billion.

The cost information available on GATE LNG terminal cannot be applied directly to estimate the capital cost or investment need of the Romania LNG terminal. Smaller

projects like the Romania LNG terminal will cost more per unit capacity due to the lack of similar economy of size. Therefore, the "six-tenth rule", which recognizes the economy of size, has been applied as follows to the capital cost estimate of GATE LNG terminal to estimate the cost of the capital cost of the Romania LNG terminal:

$$\text{Current Cost of Romania LNG Terminal} = (5/9)^{0.6} \times \$900 \text{ million} = \$633 \text{ million}$$

Since the Romania LNG project will be undertaken if feasible only later, price escalation factors should be applied to the above cost estimate. The construction cost of LNG terminals has grown rapidly in the recent past due to global shortages of construction materials (such as steel of high nickel content for LNG tanks) and, with numerous LNG projects being developed, of technical expertise for designing, constructing and managing the projects. In Europe, there has also been a steady increase in construction labor cost. In comparison with the previous average escalation of five percent per year, the LNG industry may see price increase of 10 percent per year. Assuming that the Romania LNG project takes place in 2010-2012, at least two years of price increase should be considered, which gives the following capital cost estimate for the project:

$$\text{Projected Cost of Romania LNG Project} = \$633 \text{ million} \times 1.10 \times 1.10 = \sim\$750 \text{ million}$$

The total project cost (or investment) would be around $1 billion, including the costs of project financing, permitting and approval, insurance, studies, and startup.

The feasibility study of the Romania terminal project should result in better assessment of the type of the terminal, its start-up and final capacities, capital cost, and the investment need of the project. The potential for utilizing the LNG terminal will determine the roles of private and non-private investments in the project. The GATE LNG terminal improved its economics further recently by announcing in early August 2008 that EON/Ruhrgaz will be joining the project with a commitment to use additional 3 BCM per year capacity. EON/Ruhrgaz has decided to postpone its project to build the first LNG terminal on the coastline of Germany at Wilhelmshaven. The German LNG project (10 BCM per year) was estimated last year to cost 600 MEUR or nearly $900 million.

D.3 POTENTIAL U.S. EQUITY INVESTMENT

MOEF did not bring up the need for U.S. equity investment in the project during the visit of the DM team. The DM team has also not been able to identify any interest from U.S.-based developers of LNG projects in participating financially in the construction of a LNG import terminal on the Black Sea Coast or in developing a new LNG value chain for including this project. The feasibility study will be in a better position than this DM to address this aspect of project financing.

D.4 REVIEW OF FINANCING MECHANISMS

At this early stage of planning for the Romania LNG terminal, the DM report can only note that besides contacting private investors interested in the project, Romania might consider additional financing support from multinational institutions such as IFC and the

European Union. These institutions have already implied support to the diversification of natural gas supplies and enhance the security of energy in the region.

The DM team contacted Ex-Im Bank and OPIC to advise both institutions of the Romania LNG terminal project and to learn more about the roles played by these institutions in other recent LNG projects in Europe and globally. Both institutions have shown interest in the project and have indicated that they will get involved when it becomes evident that their financial support will be to the best interests of U.S. suppliers of goods and services in this project (see Section E - U.S. Export Potential).

E. U.S. EXPORT POTENTIAL

E.1 OVERVIEW

U.S.-originated research, technologies, equipment, engineering, management services, and training have traditionally dominated the global petroleum industry. However, the petroleum industry has matured in other countries as well and several large firms based outside the U.S. are now actively pursuing this market. Both U.S. and foreign petroleum companies have also found it necessary to operate as multinational firms exploiting oil and gas resources and serving populations in different parts of the world. Therefore, while LNG technology was originally developed and demonstrated in the U.S., there is significant foreign competition in this segment of the industry (see Section F).

At present, many more LNG regasification facilities have been installed and are operational in foreign countries than in the United States. In Europe, for example, nearly 20 LNG import terminals are operating in eight countries while only four receiving terminals were built and remain in operation in the United States, in addition to two offshore Energy Bridge facilities. Only in recent years has there been a rush in requests for licenses to build and operate several terminals in North America, because of the increasing deficit of natural gas supply in the region. While LNG has become an attractive supply source to cover the shortfalls in North America, at least 20 more LNG terminals are expected to be built in Europe including terminals in seven more countries.

Nevertheless, because of the access offered under globalization, U.S. engineering firms specializing in providing services to the petroleum industry have been able to establish businesses abroad and participate in foreign LNG projects. For example, the subsidiary of U.S. based Foster Wheeler is expected to participate through its Spanish subsidiary as a member of the front-end engineering design (FEED) team selected for the LNG project of Poland on its Baltic Coast. The contract itself was awarded by the Montreal-based SNC-Lavalin Services Limited which will be the main contractor for the FEED of the gas regasification terminal. Foster Wheeler has gained substantial experience in LNG projects in Spain through its subsidiary in that country.

Globalization has also enabled U.S. firms to establish business associations with foreign engineering firms that are providing services to the oil and gas sector abroad. For

example, ILF Consulting Engineers, which is a leading firm with its headquarters in Austria and provides full scope services in the design and construction of industrial and infrastructure projects, has a U.S. subsidiary, MEI, LLC, which specializes in the design, construction, and operation of LNG import terminals. On the other hand, U.S. firms have established manufacturing operations in Asia and Europe or become distributors of foreign manufactured LNG equipment. USTDA participation in the LNG project of Romania will however enable other U.S. firms to provide support services for the LNG import terminal or to upgrade the gas infrastructure in Romania and the region.

E.2 POTENTIAL SUPPLIES OF U.S. GOODS AND SERVICES

Most of the cost involved in a traditional LNG import terminal project is for design, engineering, procurement, and construction management (EPC), ship berthing, LNG unloading and receiving facilities, LNG storage tanks, regasification facilities and basic gas delivery and connecting facilities to the existing gas transmission pipeline networks. In all of these areas and specialized activities, U.S. manufacturers and service suppliers would be competitive, particularly in light of the weakened U.S. dollar.

Rough Breakdown of Capital Construction Costs

Project Components (Identified by size or import significance)	Est. Project Cost Components (%)			Comment on U.S. Export Potential
	Total Capital Cost	Total Import Content	U.S. Export Potential	
EPC Services, including FEED	22	12 to 15	4 to 5	EPC team member
QA/QC Inspection and Reliability Testing	1	1	0.5 to 1	Independent Firm
Project Commissioning & Startup	2	1	0.5 to 1	Independent Firm
Jetty & Marine Facilities (at existing seaport)	10	4 to 5	1	Safety & Security
LNG Storage Tanks with Containment	20	12 to 16	1 to 2	Specialty Supplies
LNG Unloading System	2	2	0 to 1	Specialty Supplies
LNG Pumpout System	3	3	0 to 1	Specialty Supplies
Terminal Vapor Handling System	3	3	0 to 1	Specialty Supplies
LNG Vaporization & Gas Supply System	6	6	0 to 2	Specialty Supplies
Process Utilities & Other Support Facilities	6	3 to 4	1 to 2	Subcontracts
Offsite Facility Upgrades (including pipeline)	10	3 to 4	2 to 3	Subcontracts
Shop Fabrication / Field Construction Labor	15	0	0	---
	100	50 to 60	10 to 20	

The above rough breakdown of capital costs, import content, and U.S. export potential is for a LNG import terminal of around 5 BCM per year of natural gas throughput capacity on the Black Coast, which is expected to cost around $750 million (see Section D). Although U.S. export potential might be only 10 to 20 percent of the total import content of the project, the dollar value of these exports will be significant – $75 to 150 million. A narrative description of U.S. export potential in the project is given below:

- It is assumed that a qualified U.S.-based engineering firm will have the opportunity to be a member of the EPC team selected for the project ($30 - 38 million).
- In addition, U.S. firms may be considered for independently reviewing the project, conducting reliability testing of the products or systems to be installed as well as to participate in project commissioning & start up of the terminal ($8 - 15 million).

- Port safety and security in the development of LNG ship berthing will be a special area for consideration of U.S. firms ($8 million).
- Under international bidding, U.S. manufacturers may also have a role in the supply of materials and equipment for the project including materials of construction for LNG storage tanks and pipelines, LNG handling units, vapor recovery systems, cathodic protection of equipment, and process instrumentation and controls ($8 to 53 million).
- There are also subcontract opportunities for U.S. firms in the provision of utilities and other support facilities for supplying power, nitrogen, service air, and treated seawater for cooling to the LNG terminal ($8 to 15 million).
- The upgrading of offsite facilities to enable the receipt of vaporized gas by the existing gas networks (piping and valves, compressors, and metering systems) is a significant area of US exports in the project ($15 to 23 million).

The potential for U.S. supplies of goods and services in the project should be reviewed under the terms of reference for a USTDA-funded feasibility study of the LNG project. This review should be made as soon as a preliminary selection of the site and technology is made for the project. This preliminary assessment of U.S. export potential should also be updated in the final report on the feasibility study.

E.3 SUPPLIERS OF U.S. GOODS AND SERVICES

Subsection E.1 – Overview and Subsection E.2 – Potential Supplies of U.S. Goods and Services were prepared after contacting several U.S. firms who may be interested in the project and have a significant role as suppliers of goods or services in the project. These firms may be categorized broadly under "EPC Contractors" and "LNG Equipment Manufacturers". An illustrative list of these firms is given below:

- EPC Contractors
  - Bechtel Corporation, Houston, TX
  - CB&I, Houston, TX
  - Foster Wheeler, Houston, TX
  - Fluor Corporation, Houston, TX
  - KBR, Houston, TX
  - J. Ray Macdermott, Houston, TX
- LNG Equipment Manufacturers
  - CB&I, Houston, TX (LNG Storage Tanks)
  - Chart Industries, Garfield Heights, Ohio (Liquid Gas Handling Units)
  - Dresser Rand, Houston, TX (Various Moving Equipment)
  - Cryoquip, Inc., Murrieta, CA (Cryogenic Vaporizers and Heat Exchangers)
  - HEMCO Industries, Inc. (Unloading Arms & Other Structures)

- Manning & Lewis Engineers, Union, NJ (LNG Vaporizers)
- Selas Fluid Processing, Blue Bell, PA (LNG Vaporizers)
- Warre Rupp, Mansfield, OH (LNG Pumps)

The project may also present unique opportunities to U.S.-based developers of LNG projects or to other firms that are highly qualified to startup or operate LNG terminals. The opportunities for U.S.-based EPC contractors and LNG equipment manufacturers would be optimized if a U.S.-based LNG developer gets involved in the project. Large U.S.-based LNG developers such as ExxonMobil, ConocoPhillips, ChevronTexaco, and Marathon have selected these firms in their global projects for developing LNG value chains, which included the development of LNG receiving and regasifying terminals. In a 2004 project for developing gas fields in Qatar for LNG exports, ExxonMobil had selected a team of U.S. suppliers of goods and services led by J. Ray Macdermott as EPC contractor. This project was for supplying LNG to the United Kingdom. Other LNG project developers would include AES, Amerada Hess, Anadarko, El Paso, and Sempra and they have been active on LNG projects in North America and in Latin America. The business of El Paso included technology for offshore supply of LNG, which was sold to Excelerate Energy. Besides developing two (2) offshore LNG supply projects, Excelerate Energy developed an LNG supply project for the United Kingdom.

U.S.-originated EPC contractors are well recognized in the LNG market worldwide (also see Section F). To list a few achievements of these firms in LNG import terminals:

Bechtel is building Houston-based Cheniere's $1.2 billion Sabine Pass project now under construction in Louisiana, which will be among the world's largest, capable of regasifying 4 billion cubic feet per day (~40 BCM/Year) of natural gas. Phase 1 is scheduled to begin operations shortly, processing up to 2.6 billion cubic feet of natural gas per day. In Phase 2 of the project, Cheniere is pioneering the use of ambient air vaporizers, which do not require fuel as a source of heat.

Chicago Bridge and Iron Company (CBI) has been involved with the LNG industry for close to half a century and has designed and built virtually every type of LNG project, including import terminals, peak shaving plants, storage tanks and regasification systems. They have provided a full range of services to the industry, including conceptual design, detailed engineering, material procurement, fabrication, project management, construction, compliance support, startup and operators' personnel training. CBI qualifies as one of the most experienced engineering and construction firms serving the LNG market and reports having designed and built more than 40 LNG terminals and peak shaving plants and 200 cryogenic LNG storage tanks around the world. During their extensive involvement with the industry their work has resulted in a number of innovations, including new methods of tank insulation, BTU reduction, inlet air cooling and other proprietary processes. They also maintain in-house fabrication facilities.

KBR is very experienced in foreign projects. In more than 30 years it has developed liquefaction plants in Angola, Algeria, Australia, Malaysia, Nigeria, Oman, Indonesia, Qatar, Egypt, Yemen, and has done FEED (Front End Engineering Design) studies for regasification plants in the U.S., Canada, Italy, Spain, Poland, U.K., Mexico, India, South

Korea, Turkey, and Belgium. The company reports several "Firsts" in LNG activities such as building the first larger than 5 million tons per year liquefaction plant, having completed a FEED study in 5 months, coming up with new design for heat exchangers or for hybrid fresh/seawater systems, and introducing air cooled facilities.

Irrespective of the involvement of U.S.-based LNG developers or EPC engineering firms, the Romania LNG project has subcontract opportunities for small and large U.S. firms with different specialties in developing and implementing facilities in support of the LNG import terminal. Additional infrastructure will also have to be built to connect the LNG terminal to the existing gas networks and/or to support new gas markets in the region. In the latter case, the project might consider alternatives to regasifying LNG at the terminal and piping natural gas from the terminal (e.g., truck transport of LNG to users) for which U.S.-originated cryogenic material handling technology would be suitable.

U.S. firms can also supply a range of specialty materials to a LNG project including chemicals, insulation material, coating technology and applications, cathode protection and environmental management systems. Data acquisition and management software, product testing and inspection as well as project safety, security and surveillance are areas for which U.S. companies are well recognized and they can be competitive in providing these services. U.S. export opportunities will be favorably impacted as a result of USTDA involvement through a feasibility study grant in the LNG project of Romania.

F. FOREIGN COMPETITION

F.1 OVERVIEW

There are several foreign companies that could become competition to U.S. companies in developing the Romania LNG project and for supplying technologies, equipment, goods and services (including consulting and managerial support) to the project. These firms have extensive knowledge and experience related to developing, designing, building and putting into operation LNG regasification terminals worldwide. These firms are mostly from Europe and Asia where the largest motivation and opportunities have existed to date for importing liquefied natural gas. In addition, Romania is capable of participating in the design of the project and for fabricating or installing some of the main units and auxiliary equipment and supplying other goods and services in the project.

While foreign competition and Romania's domestic capabilities are expected to restrict U.S. export potential (see Section E), the proposed feasibility study grant of USTDA will enable the U.S. export potential to be materialized. This potential can also be increased if the participation of U.S. firms in the feasibility study leads to the involvement of a U.S.-based developer of LNG value chains in the project.

F.2 DEVELOPERS OF LNG IMPORT TERMINAL PROJECTS IN EUROPE

A review of information on the LNG import terminal projects that have been proposed, under construction or recently put into operation in Europe shows that several large multinational firms are involved in developing these projects:

- France (Fos Cavagou – Fos 2; Capacity: 8.25 BCM/year; LNG source: Egypt)
  - Gas de France and Total
- France (Le Verdon; Capacity: 2-3 BCM/year; Proposed Terminal)
  - Total
- Germany (Wilhelmshaven; Capacity: 10 BCM/year; Proposed Terminal)
  - E.ON
- Greece (Crete and Kavala; Proposed Terminals)
  - Government and New Proposed Power Plant
- Ireland (Tarbert; Proposed Terminal)
  - Hess LNG
- Italy (Rovigo – North Adriatic; Capacity: 8 BCM/year; LNG Source: Qatar)
  - Qatar Petroleum, ExxonMobil, Edison Gas
- Italy (Brindisi; Capacity: 8 BCM/year; LNG Source: Egypt)
  - BG Italia S.p.a.
- Italy (Livorno; Capacity: 3 BCM/year; Proposed Terminal)
  - Edison, Solvay, BP
- Italy (Offshore Livorno; Capacity: 4 BCM/year; Proposed Terminal)
  - Endesa and Amga)
- Italy (San Ferdinando; Capacity: 6 – 12 BCM/year; Proposed Terminal)
  - Falck Group
- Italy (San Ferdinando; Capacity: 4 -8 BCM/year; Proposed Terminal)
  - Societa Petrolifera and Gioia Tauro (local government)
- Italy (Taranto; Capacity: 5-9 BCM/year; Proposed Terminal)
  - Enel
- Italy (Taranto; Capacity: 8 BCM/year; Proposed Terminal)
  - Gas Natural
- Italy (Vado Liqure; Capacity: 5 – 9 BCM/year; Proposed Terminal)
  - Enel

- Italy (Muggia; Capacity: 5 – 9 BCM/year; Proposed Terminal)
  - Enel
- Italy (Zaule; Capacity: 8 BCM/year; Proposed Terminal)
  - Gas Natural
- Italy (Priollo; Capacity: 8 BCM/year; Proposed Terminal)
  - Shell Energy Europe and ERG Power & Gas
- Italy (Porto Empedocle; Capacity: Up to 12 BCM/year; Proposed Terminal)
  - Nuove Energie
- Italy (Offshore Trieste; Capacity: 8 BCM/year; Proposed Terminal)
  - Endesa – Friulia (local government)
- Netherlands (Eemshaven; Proposed Terminal)
  - ConocoPhillips and Essent Energie B.V.
- Netherlands (Rotterdam; Capacity: 9 to 16 BCM/year; LNG Source: Not Known)
  - Gasunie and Vopak
- Poland (Swinoujscie; Capacity: 5 BCM/year; LNG Source: Not Known)
  - PGNiG
- Spain (El Ferrol; Capacity: 3 to 6 BCM/year; LNG Source: Algeria)
  - Union Fenosa Gas, Endesa, Tojeiro Group, Sonatrach, Others)
- Spain (Las Palmas de Gran Canaria; Capacity: < 2 BCM/year; Proposed Terminal)
  - Endesa
- Spain (Santa Cruz de Tenerife; Capacity: < 2 BCM/year; Proposed Terminal)
  - Endesa
- United Kingdom (Dragon; Capacity: 6 – 9 BCM/year; LNG Source: Egypt and Trinidad and Tobago)
  - Petroplus, BG Group, Petronas
- United Kingdom (South Hook; Capacity: 10 – 20 BCM/year; LNG Source: Qatar)
  - ExxonMobil and Qatar Petroleum
- United Kingdom (Canvey Island; Capacity; 5.4 BCM/year; Proposed Terminal)
  - Centrica, LNG Japan; Calor Gas and Osaka Gas
- United Kingdom (Teesside)
  - ConocoPhillips
- United Kingdom (Offshore Teeside)

- Excelerate Energy

- United Kingdom (Anglesey)
  - Canatxx Energy Ventures

Of the several LNG projects listed above, only a handful of projects seem to involve U.S.-based developers of LNG projects. These projects are fairly large and they are believed to involve long term LNG supply contracts written in association with the development of new LNG value chains. There are no LNG regasification terminals on the Black Sea coastline and the difficulty of ships having access to these waters is well known. However, major oil companies with experience in developing LNG value chains in other parts of the world should be able to overcome this problem. European developers of LNG projects will be the natural competitors for U.S. developers, along with Japanese and Korean firms which are increasingly participating in new LNG value chains. The establishment of a LNG value chain entirely within the territories of the Black Sea such as a project built around Caspian Sea gas might be of greater interest to U.S. developers.

F.3 FOREIGN LNG PROJECT DESIGNERS AND CONSTRUCTORS

The following foreign firms have gathered significant experience in the design, procurement and/or construction management of LNG import terminals, with some firms also being able to provide LNG storage tanks (largest cost item) for these projects:

- Japan: Mitsubishi Heavy Industries, Chiyoda and IHI
- France: Technigaz, Snecma, Sofregaz and Technip,
- Italy: Saipem and Techint,
- Netherlands: CB&I, and
- Norway: Aker Kvaener.

CB&I now has its headquarters in the Netherlands from where it operates under the name of Chicago Bridge and Iron Company, N.V. after acquiring ABB-Lummus, a leading designer of heat transfer systems. Consequently, unless it is justified by strong reasons of business development and technical needs, CB&I would be offering services to European LNG import terminal projects from their offices in the region. The London office of CB&I was selected to perform the FEED for Germany's E.ON in their proposed LNG terminal project at Wilhelmshaven on the Baltic Sea coastline. Since then, as noted in Section D of this report, E.ON has decided to postpone this project and become a partner and user of the Netherlands GATE terminal near Rotterdam. The developer of the GATE terminal projects, Vopak, has also been invited to join the E.ON project in Germany.

Other foreign firms that have entered the global market for designing and building LNG terminal projects, often in partnership with the larger EPC contractor include:

- CTCI from Taiwan,
- JGC from Japan,

- SNC-Lavalin from Canada,
- ACS from Spain,
- Worley Parsons from Australia,
- Linde AG from Germany and
- Whessoe and Volker Stevin from the United Kingdom.

The design and construction of LNG terminal projects also create opportunities for subcontracting, as against partnership in forming the prime contractor. Because of the steady increase of LNG import terminals being constructed and operational over the last three decades, there is a diverse list of smaller foreign companies that can pursue these opportunities in Europe. For the Romania LNG project, this type of foreign competition would also include several local companies that are providing services to the well-established petroleum industry of this country. In addition, because of the recent steep increase of the cost of construction labor in West Europe, LNG import terminal projects are considering shop fabrication of some of the units to be installed. To the extent that shop fabrication is needed for the Romania LNG project, developing countries in Asia would be providing a new type of foreign competition to U.S. and Romanian firms.

F.4 LNG IMPORT TERMINAL EQUIPMENT MANUFACTURERS

In general, most LNG import terminal equipment such as LNG storage tanks, pumps, compressors, vaporizers, and unloading systems can also be supplied by manufacturers in European and Asian countries that have been importing LNG for several years. As a part of their strategy for expanding their markets globally, leading U.S. manufacturers also have started manufacturing process equipment abroad or established affiliations with foreign companies that are supplying equipment to the processing industry. For example:

- Chart Industries, Inc. has operations in Australia, China, Czech Republic and the UK;
- Cryoquip, Inc. manufactures equipment in UK, Malaysia, India, and Australia;
- Dresser-Rand manufactures in France, Germany, Norway, and India; and
- Selas Fluid Systems is associated with the German Linde Engineering Group.

High technology work in some of the above firms seems to be performed in the U.S. however and the need for such work will depend on the design of the project. The participation of U.S. firms in the feasibility study of the Romania LNG terminal project, which will include a conceptual or preliminary design of the project, should enable specialty processing equipment from the United States to be considered for the project.

F.5 INTERNATIONAL CONSORTIUMS FOR LNG TERMINAL PROJECTS

The potential for teaming of international firms in the design and construction of LNG terminal projects is illustrated by the construction contracts awarded by Sempra for two (2) LNG receiving and regasifying terminal projects in North America:

- Baja California, Mexico (Capacity ~10 BCM/year)
- Lake Charles, LA (Capacity ~15 BCM/year)

For the Baja California project, an international consortium comprised of Techint, Black & Veatch, Mitsubishi and Vinci Construction Grands Projects of France was awarded the EPC contract of approximately $500 million. A joint venture involving the Costain Group PLC, an international construction and civil engineering company headquartered in London, and China Harbor, one of China's largest construction groups, won the construction contract for the project's $170 million breakwater. Sempra awarded the $500 million EPC contract for the Lake Charles terminal to a consortium comprised of Aker Kvaerner of Norway and Tokyo-based Ishikawajima-Harima Heavy Industries.

In Europe, the recently completed project to double throughput capacity for the Fluxys LNG terminal in Zeebrugge, Belgium gives another example of the complexity of these projects and the variety of companies that may be involved. Tractebel Engineering (a division of Suez SA from France) supervised the project. The EPC contract was awarded to a joint venture comprised of SN Technigaz (Saipem from Italy), Fontec (Soletanche-Bachy from France) and MBG (Compagnie d'Entreprises CFE from Belgium). The project also involved the involvement of Exmar from Belgium in the project's floating regasification unit and ship-to-ship LNG transfer facilities. Exmar working with Ondernemingen Jan De Nul from Holland, Praxair Inc. and Jacobs Engineering Group Inc. from the U.S., ERM Benelux and Ecolas NV both from Belgium.

As each LNG terminal project would have its unique design construction requirements, the USTDA grant for the feasibility study of the Romania LNG project would help in identifying these project opportunities for interested and qualified U.S. firms. Recognizing these opportunities will optimize the U.S. export potential in the project.

G. DEVELOPMENTAL IMPACT

A preliminary assessment of the developmental impact of the Romania LNG terminal project is given below. This assessment would have to be updated under the terms of reference for the feasibility study funded by USTDA in support of this project.

G.1 PRIMARY DEVELOPMENTAL BENEFITS

G.1.1 Infrastructure Development

The development of a LNG receiving and regasification terminal would need an upgrade of the country's pipeline system for transmitting and distributing natural gas to existing and new users of natural gas. The project may also lead to the installation of new cross-border interconnections of Romania's gas networks with the networks of its neighbors. Because of its importance to the project, the upgrade of Romania's National Transmission System (NTS) should be a part of the feasibility study. The establishment

of gas pipeline interconnections with other countries would have to be seriously considered in looking at making the terminal project more economically viable.

G.1.2 Human Capacity Building

The job creation from the Romania LNG terminal project and improvements in the gas networks of Romania would be significant. The operation of the LNG terminal and improved gas networks, including the operation of new marine facilities at the terminal and of modern system controls for the networks, will require special training and skills to be developed in Romania. The educational challenge to make such specialized labor available will be high and the Government of Romania would have to start making plans in this regard soon. As LNG related technologies are sophisticated and evolving, arranging for Romanian workers to gain on-the-job training will also be necessary.

G.1.3 Technology Transfer and Productivity Improvement

In addition to the technology transfer associated with the construction of a LNG terminal, which is reflected by the high import content of the project, Romania will have to import technologies for ensuring port safety and security at other sites in the location of the terminal. There should also be a transfer of environmental technologies for the operation of the LNG terminal and in other port activities. The upgrading of the country's gas networks and the anticipated increase of gas utilization in Romania will also require technology transfer for optimizing the performance of the networks and for maintaining the system including gas storage facilities. Technology transfer will also be necessary to make new products available to the users of natural gas, including technologies for using natural gas for transportation. A successful implementation of the Romania LNG project followed by the modernization and expansion of the gas sector will lead to an improvement of productivity in Romania.

G.1.4 Market Oriented Reform

The proposed LNG terminal will contribute to improving the diversity of natural gas supplies available to Romania and its energy security. Diversifying energy sources will not only be of strategic value with regard to the current reliance upon Russian gas, but it will also help to generate the right business environment in the country to facilitate both commercial and industrial growth. By making gas markets more competitive, there should be a general increase of investments in the private sector. This will be a positive difference in the economic performance of the private sector. This will also enable the government to augment its social programs and projects.

G.2 DEVELOPMENT ALTERNATIVES

Romania can achieve its primary goal of diversifying its supplies alternatively under the country's programs for working on multi-national projects for importing natural gas from new sources. The Nabucco project, which is designed to bring gas from the Caspian Sea to West Europe, includes Romania as a partner transit country. While the benefits of this project to Romania would be significant, the project relies upon a single source of natural

gas and it is facing competition from Russian gas under other pipeline projects for the region. The development of new LNG terminal projects at other countries of South European Europe followed by the development of natural gas pipeline interconnections among the countries of the region is another option being considered by Romania. The feasibility of the LNG project of Romania should evaluate these options in more detail.

H. IMPACT ON THE ENVIRONMENT

It can always be speculated how much the development of this type of facilities could, in the worst possible case, impact their surrounding environments. The fact is that experience has shown that the technological advancements, regulatory frameworks and enforcing activities as well as managerial procedures in every step of the planning, construction and operation have shown a remarkable record of compliance with safety standards and environmental regulations. These operations can be qualified as very friendly when dealing with the environment at large.

Nowadays, LNG ships and terminals are almost risk free to the environment. Cases of mishaps are very isolated. For example, it can always be argued that a terminal and its related infrastructure could pose risks to marine habitats but these risks can be effectively managed and mitigated by employing a diversity of techniques, equipment, trained personnel and round the clock preparedness for any unforeseen eventuality. Environmental impact assessments would have to be conducted, in any case, and these are required for approval of this type of project and to guide its further development, implementation, financing, startup and operation.

I. IMPACT ON U.S. LABOR

The development of an LNG import terminal on the Black Sea Coast should not result in the movement of any firm to transfer it operations outside the United States or capture any of the existing U.S. market for the same business with adverse impact on domestic employment. On the contrary, it will provide opportunities for a variety of personnel involved in the designing and construction, operating from local offices and later on in situ at the location. In addition, USTDA funding of a feasibility study for this project will not violate any internationally recognized worker rights.

As emphasized in the preceding paragraph, the possibility of the participation of U.S. firms in the project, as USTDA grant funding would anticipate, should have a positive impact on U.S. labor. The exposure of U.S. professionals specializing in the energy and natural gas sector to the situation in the Black Sea region will add to their experience with the global petroleum industry. The exposure of Romanian government personnel and other stakeholders in the project to U.S. technologies, systems, and procedures will improve the chances of these individuals selecting them in future international competitions with foreign alternatives. Eventually, this will increase the potential for export of U.S. equipment and services to the region.

J. JUSTIFICATION

The USTDA-funded activity is justified by the potential for U.S. exports in the project and the support this activity will provide to U.S. suppliers of goods and services in a market that is characterized by significant foreign competition.

The LNG project will have beneficial impacts in all the areas of interest to USTDA programs. In particular, the proposed USTDA-funded activity is also designed to help in market reform in the energy and gas sector of the Black Sea region which will further open up new activities for international competition and subsequently additional business opportunities for U.S. interests. Furthermore, U.S. energy security concerns in the region involve both diversification of gas supplies and reduction of dependence of European needs on the existing situation of exclusive Russian sources.

SECTION K QUALIFICATIONS

The proposed work under the terms of reference (TOR) should be provided by a team of qualified and experienced professionals representing a firm or joint venture (the Contractor) that has several years of experience in the development of the energy sector in the United States and abroad. In addition, the Contractor should have participated recently in the development of new LNG value chains, including LNG receiving and regasifying terminal projects.

The Project Manager (PM) offered by the Contractor to lead the team of professionals for providing services under the TOR should have extensive familiarity with the current global and applicable regional planning and issues related to the energy sector, especially with the markets for natural gas and electricity. The matrix of professional skills offered by the Contractor should include: conducting market surveys and analysis in order to project future demands for energy, upgrading natural gas transmission and distribution pipeline systems, LNG production and shipping, LNG terminal site evaluation and design (including LNG supply and purchase contract development).

The proposed TOR also requires that the team of professionals offered by the Contractor is up to date with the latest technologies in natural gas and LNG handling and storage, and holds practical experience in the application of modern information technologies to assist in the collection and processing of regional energy sector data, with special emphasis on measuring gas utilization trends in the region, and in the implementation of energy infrastructure development projects. An important aspect of LNG project implementation will be the ability to recognize, advise, and propose alternatives on the environmental, health and safety issues of the project.

In the opinion of the DM Contractor, the proposed TOR would require the following labor categories for successfully performing the feasibility study:

- Project Manager

- Energy Sector Specialist
- LNG Supply Specialist
- Gas Pipelines Specialist
- LNG Shipping Specialist
- Terminal Operations Specialist
- LNG Terminal Design Specialist
- Gas Utilization Analyst
- LNG Site Evaluator
- Economic/Financial Analysts
- Technical and Logistics Support

More than one of above skills could be provided by the same individual in the team or complimentary skills might be offered by the Contractor.

The following maximum scores, which add to 100, may be considered by the Grantee in selecting the Contractor:

Selection Criteria	Score
Experience in the development of oil and gas sector projects in the U.S. and abroad	25
Experience in LNG terminal projects, including site selection and terminal design	25
Experience in conducting market surveys and analysis of the energy sector	10
Experience in upgrading natural gas transmission and distribution systems	10
Experience in LNG production and shipping	10
Experience in LNG economics and financing	10
Team organization and management plan	10
Total Score	**100**

L. PROPOSED TERMS OF REFERENCE

L.1 OBJECTIVES OF THE FEASIBILITY STUDY

1. To assess the potential demand and markets for LNG in Romania and the region, as well as the future availability (volumes, pricing, timing and technology) of LNG supplies to the region, and to determine the size and type of the LNG import terminal.
2. To determine other infrastructure development needs of the region, including the reconstruction and improvement of Romania's National Gas Transmission System.

3. To conduct technical, economic and financial analyses in order to confirm the feasibility of the LNG Import Terminal Project ("Project), and to develop an implementation plan for the Project.

L.2 SCOPE OF WORK

TASK 1 Potential LNG Demand and Markets in Romania and the Region

The Contractor shall assess the potential demand and markets for LNG in Romania and the region by undertaking the following subtasks and activities:

1.1 Analysis of the current and projected Romanian and regional natural gas consumption and import requirements. This subtask shall involve as a minimum the following activities:

1.1.1 Obtain from the Ministry of Economy and Finance (MOEF) and other agencies of the Government of Romania (GOR) all relevant data, policy documents, analyses and future projections of the natural gas import requirements of Romania. The Grantee will assist the Contractor in gathering this information and in holding meetings to discuss the information with the appropriate specialists at the MOEF, the National Agency for Mineral Resources, and the National Regulatory Authority for Energy (ANRE). The Grantee will also share with the Contractor the results of any relevant research performed for or by the Grantee.

1.1.2 Review and update the information obtained in Activity 1.1.1 by contacting a representative cross-section of major Romanian gas sector entities involved in oil and gas exploration and in natural gas production, storage, transportation, supply, and distribution. The Contractor shall also review the information on consumption of natural gas with major industrial users, including, but not limited to, the users of natural gas as fuel for heat and electricity production, and the manufacturers of fertilizers. The Grantee will assist in this activity by enabling the Contractor to contact and have productive discussions with these entities.

1.1.3 In coordination with the Grantee, the Contractor shall identify and evaluate the regional markets for imported natural gas that can be potentially served by Romania's pipeline infrastructure, existing and planned, for supplying natural gas to the region.

1.1.4 Verify and complete the information gathered in Activities 1.1.1 – 1.1.3 by referring to key reports on gas imports and transportation published by the World Bank, the European Union, the International Energy Agency and other entities that are active in monitoring recent developments in the energy sectors of Romania and the region.

1.1.5 Estimate the anticipated future natural gas import requirements of Romania and the region, and the associated demand-supply gaps and pricing trends, for 2010, 2015 and 2020, that can be addressed by the proposed LNG import terminal.

1.2 Assess the receptivity and off-take potential for LNG among the major suppliers, distributors and users of natural gas in Romania and the region, and the sensitivity of these markets to varying LNG economics on both absolute and competitive bases. In making this assessment, the Contractor shall consider the following entities, at a minimum:

1.2.1 Suppliers and distributors of natural gas to at least 90% of these markets in Romania, including the smaller entities that are expected to grow sufficiently in the future to fall within these groups; and

1.2.2 Large-scale industrial purchasers of natural gas in Romania, as identified by Subtask 1.1, and other manufacturers identified by the Grantee as being potentially interested in LNG as an alternative source of natural gas.

1.3 As an extension of Subtasks 1.1 and 1.2, identify the needs for developing other infrastructure (gas pipelines and storage facilities, roads, communication infrastructure, etc.) in Romania, and on its borders with other countries, in order to promote gas utilization in the region and support LNG imports.

DELIVERABLE: Task 1 Report, containing a summary of the information gathered by the Contractor and details of the work performed in the task, including findings on future gas import requirements as well as potential LNG demand and markets in Romania and the region.

TASK 2 <u>National Gas Transmission System (NTS)</u>

The Contractor shall evaluate the readiness of Romania's NTS to receive additional supplies of natural gas from the Project and to transport these supplies to existing and future markets in Romania and the region as determined in Task 1. In performing this task, the Contractor shall work closely with Transgaz, the GOR-owned operator of the national gas transmission system, and undertake the following subtasks and activities:

2.1 The Contractor shall outline the implications for the future operations and performance of the NTS based on the system's reception of natural gas at different rates and in different periods of operation from the LNG import terminal as indicated by the findings of Task 1. For this subtask, it will be assumed that the terminal is located in the Port of Constantza. The implications of the system receiving natural gas from alternate new sources (for example, the Nabucco pipeline project) shall also be examined. In this subtask, the Contractor shall also review information provided by Transgaz on the condition and operability of the transmission pipelines, and on the expected lives of compressor and metering stations in the system.

2.2 Based on the results of Subtask 2.1 and further discussions with Transgaz on its current projects and plans for restructuring and improving the system, the Contractor shall identify and describe additional improvements required in order for the system to function optimally in connection with the LNG import terminal Project.

2.3 In conjunction with Subtask 2.2 and by working with Transgaz and the Grantee, the Contractor shall identify and assess the possibilities for Romania to establish new cross-border interconnections, in particular to improve the feasibility of the Project.

2.4 With reference to the findings of Subtasks 2.1 – 2.3, the Contractor shall provide rough order-of-magnitude (ROM) estimates of the investments required at Transgaz for upgrading the NTS.

DELIVERABLE: Task 2 Report, describing and evaluating the NTS and specifying the major required improvements to the system, including cost estimates for these improvements.

TASK 3 LNG Supplies and Other Future Natural Gas Alternatives

The Contractor shall assess the future availability of LNG supplies (volumes, pricing, timing, and technology), in terms of the availability of LNG production capacity and shipping, and compare LNG with alternative energy resources that might exist for Romania and the region. This task shall include the following subtasks and activities:

3.1 The Contractor shall make a general assessment of the present and future availability and pricing of LNG production capacity for Romania and the region. This will include a review of LNG producers in North Africa (Egypt, Libya, and Algeria) and the Middle East (Qatar, Abu Dhabi, Oman, and the Yemen), as well as other potential suppliers in the Atlantic Basin (West Africa, Trinidad, Venezuela and Norway). Alternative options of purchasing LNG directly from existing projects or from an aggregator (such as British Gas, Shell or Total) shall also be evaluated, along with the option of sourcing via the international gas trading community. This assessment shall include, at a minimum, the following activities:

3.1.1 Gathering of information on the availability, timing and probable terms of LNG supply:

- LNG production capacity in operation or under construction;
- Planned new natural gas liquefaction capacity;
- Existing contractual commitments, contract durations and quantities, volumetric and destination flexibility; and

- LNG purchases directly from a project or from an aggregator, either on a contractual or spot basis, and the advantages / disadvantages of such alternatives;

3.1.2 Pricing estimates on a free-on-board (FOB) basis;

3.1.3 An evaluation of the future competition for available LNG capacity from other buyers;

3.1.4 An analysis of current trends in pricing formulas, stakeholders' composition in the value chain, and timing and other hurdles; and

3.1.5 An evaluation of current receiving performance at LNG regasification terminals in Europe, including their use of installed capacity and operational efficiency.

3.2 Based on the most likely sources of LNG, the Contractor shall define for each case of potential availability of LNG production capacity the availability and pricing of LNG shipping capacity. Transportation, insurance, and financial cost estimates shall be provided separately.

3.2.1 This subtask will also require a review of world LNG gas carrier fleets, both existing and on order, and an analysis of the technologies and modalities available to transport and deliver LNG to the different types of receiving terminals to be considered in connection with the Project.

3.3 The Contractor shall analyze in economic terms other natural gas supply options that might exist in the long-term to Romania and the region. These options (to be selected jointly with the Grantee) shall be compared and contrasted with the LNG terminal in order to identify the advantages and disadvantages for each of them.

DELIVERABLE: Interim Report on the Feasibility Study, integrating the findings of Tasks 1-3 to determine the size and type of LNG import terminal to be evaluated in the remaining tasks of the Study.

TASK 4 Site Evaluation; Environmental and Regulatory Reviews

The Contractor shall evaluate the Port of Constantza and another prospective site on the Black Sea coastline of Romania, to be designated by the Grantee, as candidates for installing and operating the LNG Import Terminal. This task shall include the following subtasks and activities:

4.1 The evaluation of candidate sites for the Project shall involve, as a minimum, the following activities:

4.1.1 Collection of marine data for each site to determine the ease of marine navigation (ship approach and maneuvering);

4.1.2 Study of soil topography, seismic characteristics, and marine and soil erosion, as well as future port projects affecting the situation;

4.1.3 Determination (from existing regional data) of yearly profiles of air and seawater temperatures, as well as atmospheric pressure ranges and rates of change; and

4.1.4 Evaluation of space availability, marine safety, port security, and other environmental and topological constraints.

4.2 The Contractor shall conduct a preliminary review of Project's potential environmental impact with reference to local requirements and those of multi-lateral lending agencies. This review shall identify potential negative impacts, discuss the extent to which they can be mitigated, and develop plans for full environmental impact assessment in anticipation of the Project moving forward to the implementation stage

4.3 A review shall be completed of all relevant local and international non-environmental regulations and requirements, with descriptions of all necessary follow-up steps to assure full compliance in case of Project implementation.

4.4 The Contractor shall perform a comparative risk and cost assessment of the sites considered under this task to select in coordination with Romgaz a site for the remaining tasks of the Study.

TASK 5 Preliminary Design of LNG Terminals and Marine Facility

The Contractor shall conduct a preliminary design of two alternative scenarios to receive, store, and re-gasify LNG at the selected site, and to transmit the gas through the existing network of pipelines or to new transmission/reception facilities. The design shall include a rough order-of-magnitude (ROM) cost estimate for constructing, operating and maintaining the LNG terminal. It will include a plant layout, process descriptions, process design data, equipment data sheets, modes of operation, start-up and pre-commissioning costs, utilities requirements, instrumentation and controls requirements, storage tank requirements, an equipment list, FEED and EPC requirements, and a listing of potential U.S. suppliers of goods and services for the Project. The preliminary design shall be to international standards for LNG import terminals and shall include the following engineering details:

- *LNG Berthing / Jetty Design*: A conceptual design for one or more jetties and associated support facilities will be provided.
- *Terminal Capacity*: The projected gas requirements in various pipelines to be served by the new terminal will be reviewed and a recommendation will be made regarding the future capacity of the terminal.

- *LNG Terminal Layouts:* Physical layouts for the terminals will be prepared as well as for connections to the existing gas transmission pipelines or other facilities to receive natural gas from the terminal.
- *LNG Storage Designs:* A preliminary design for LNG storage will be prepared. Sizes and types of tanks will be chosen based principally on life-cycle economics as well as on reliability and safety considerations.
- *Impact of New Technology*: An assessment will be made of the readiness, availability over time, and potential impact of new and emerging technologies on the technical designs for the Project, with associated recommendations.
- *Unloading Designs:* The characteristics of the LNG tankers delivering the LNG will be defined. A preliminary design for the terminal unloading facilities will be prepared.
- *LNG Send-out Designs*: A preliminary design for LNG send-out facilities and processes will be prepared.
- *LNG Vapor Handling System*: The preliminary design will attempt to eliminate the need for flaring of vapors. A recommendation among seawater vaporizers, submerged combustion vaporizers, and intermediate fluid vaporizers will be made, based principally on lifetime economic and environmental considerations.
- *Fire & Hazard Protection:* The preliminary designs will incorporate all required elements for fire and hazard protection, and such non-required elements as are consistent with world-standard practices.
- *Utility Supply Study:* Required utilities such as electric power, nitrogen, cooling water, fresh water and waste treatment will be studied, and a recommendation for each with respect to on-site generation/production/treatment vs. sourcing from public utilities will be made, based principally on lifetime economic, reliability and environmental considerations.
- *Other Infrastructure and Necessary Works*: Other infrastructure and works that may have to be evaluated under the preliminary design include:
  - Road bridge across the connection-canal between the sea-river basin and the iron-ore barge;
  - LNG pipelines bridge;
  - Access roads connection/junction for roads and bridge access platforms;
  - LNG loading ramps into railway/roadway tankers and river barges;
  - Railway and related embankment for the rail platform;
  - Road tankers platform, including embankments;
  - Access road from the rail and road tanker platforms to existing roads and barge loading (fluvial tankers) platforms; connections for utilities to the terminal site; and
  - Office and housing facilities as well as other construction needs, such as a fire station and material and equipment storage.

TASK 6 Economic & Financial Analysis of the Project

6.1 Economic Analysis: The Contractor shall perform a detailed economic analysis of the Project and make a recommendation to the Grantee concerning the overall economic viability of the Project. In performing this task, the Contractor shall utilize the findings on the demand, supply and pricing of natural gas and LNG from earlier tasks of the Study, the needs for infrastructure development in the region to support the Project, and the findings of Task 5 on the capital investment costs and operation and maintenance (O&M) costs for the LNG terminal. The Contractor shall apply mathematical models suitable for economic analysis of greenfield LNG projects, and for testing sensitivities regarding key Study assumptions and Project drivers, including the effect of sustained low gas prices on the overall Project economics, its returns on investment, and its level of safety for coverage of debt service obligations. The data used by these models shall include, but not be limited to, the following:

- Financing structure and financing costs;
- Exchange rates;
- Input costs (including ocean transportation and other related
- components);
- Cost and price inflation;
- Fixed and variable operating costs;
- Capital costs;
- Demand and throughput volumes;
- Market pricing; and
- Romanian tax and fiscal regime.

6.2 Financial Analysis: In this task, the Contractor shall first identify prospective sources of capital investment, including debt financing, and gather information on the views of the respective investing and lending organizations, both locally and internationally. The Contractor shall then arrange for the Grantee and other GOR representatives to participate in discussions with relevant international development finance sources, including (but not limited to) the World Bank, EBRD, IBRD, IFC, OPIC and the US Export-Import Bank in order to assess their requirements and determine their level of interest and willingness to make commitments contingent on favorable Study findings. With the approval of the Grantee, discussions may also have to be arranged with selected major gas and energy companies (particularly those in the prospective role of off-takers of the Project's gas) as potential supplemental equity investors in, financial guarantors of, and/or lenders to the Project.

DELIVERABLE: Task 6 Report on the economic viability and implementation financing needs of the Project, with a plan and recommendations on the optimal types, sources, and mix of financing.

TASK 7 U.S. Supplier Potential

The Contractor shall assess the potential for US exports of goods and services to the proposed Project. The Contractor shall prepare a list of U.S. suppliers of major equipment and services required for the Project, including services required in the detailed design and construction phases (FEED and EPC) of the Project

TASK 8 Developmental Impact Analysis

The Contractor shall assess the development benefits associated with the Project and the methodology for measuring those benefits. The assessment shall include examples of the development benefits that would be expected in Romania and the region if the Project is implemented as outlined in the Final Report. The Contractor shall develop a methodology for assessing these impacts over time, and shall identify where to obtain this information in the future (e.g., GOR and other regional governmental statistics, the European Commission in Brussels, or the U.S. Embassy in Bucharest). The Contractor shall only list benefits in the categories that are applicable to the Project.

Specifically, the Contractor shall evaluate the categories listed below to determine which are likely to result from the Contractor's recommendations. Where possible, the Contractor shall include quantitative estimates. The categories to be considered are as follows:

- *Infrastructure*: Estimate the expected scale of infrastructure development and improvements.
- *Human Capacity Building*: Estimate the number and type of jobs that would be created if the Contractor's recommendations are implemented. Comment on any prospective training recommended in the Final Report, including an estimate of the number of persons to be trained, type of training needed, and the desired outcome of the training.
- *Technology Transfer and Productivity Improvement*: Discuss potential commercial contracts for licensing new technologies that are recommended, as well as the expected productivity benefits of any such technologies. More generally, discuss the expected efficiency gains related to the recommendations, such as improved systems or processes that enhance productivity or result in a more efficient use of resources.
- *Market-Oriented Reform*: Discuss any market-oriented reforms that would facilitate implementation of the Project or that would result from Project implementation, such as any policy changes that would result in more transparent regulatory systems and institutions or increased competition.
- *Energy Security and Other Benefits*: Discuss prospective indirect development impacts of the key recommendations, such as enhanced safety and economic benefits (including increases in investment and indirect job creation) that are not captured in the four categories listed above.

TASK 9 Implementation Plan

The Contractor shall provide for consideration by the Grantee and the GOR a Project implementation plan based on the findings of the entire Study, including the siting of the LNG import terminal and the technical, economic, and financial assessments of the Project. The main elements of this plan shall include business development, LNG market promotion, commencement of detailed engineering, and negotiations and contract agreements for LNG purchase and supply for the Project. The implementation plan shall also address the modifications required, if any, for the supply of natural gas in Romania and the region expected to benefit from the Project.

TASK 10 Final Report

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

Notes:

(i) The Contractor is responsible for compliance with U.S. export licensing requirements, if applicable, in the performance of the Terms of Reference.

(ii) The Contractor and the Grantee shall be careful to ensure that the public version of the Final Report contains no security or confidential information.

(iii) The Grantee and USTDA shall have an irrevocable, worldwide, royalty-free, non-exclusive right to use and distribute the Final Report and all work product that is developed under these Terms of Reference.

L.3 BUDGET ESTIMATE & PERIOD OF COMPLETION

The performance of a feasibility study as per the terms of reference proposed above is expected to cost $1,061,075. Budget details are given on the following pages.

It is estimated that this feasibility study can be completed within twelve (12) months after commencement of work.

M. RECOMMENDATIONS

USTDA is recommended to consider a grant of $1,061,975 for ROMGAZ to hire a U.S. firm to conduct a feasibility study of Romania's project to build a LNG import terminal on its Black Sea coastline. Despite its large investment requirement of around $1 billion and complexity for both technical and geopolitical reasons, the project is needed for Romania to diversify its supply of natural gas and to achieve energy security at a critical period of its ascension to the European Union. The successful implementation of this project will help in the opening of Romania's energy and natural gas markets and to enable these markets to be integrated with those of Central and Southeastern Europe.

The economic viability of LNG import projects has been demonstrated over the last few decades in Europe and other parts of the world. The global value of LNG is expected to increase as more countries are installing LNG receiving and regasifying terminals. While multinational firms that have interest in all links of the global chain for LNG have traditionally developed these projects, ROMGAZ has both the capability and commitment to take advantage of USTDA's grant to evaluate and develop the project.

The U.S. export potential in the project is $75 to 150 million. The participation of U.S. firms at an early stage of the planning and design of Romania's LNG project will help this export potential to materialize and even be optimized.

As per the requirements of law in Romania, there will have to be a competition to choose the company to perform the feasibility study. This competition may follow USTDA's procedure for advertising a request for U.S. firms to submit proposals to the Grantee.

BUDGET ESTIMATE – ROMANIA LNG PROJECT FEASIBILITY STUDY

Estimated Levels of Effort and Labor Costs (Tasks 1-4)

Labor Category	Daily Rate ($)	Project Kickoff & Task 1		Task 2		Task 3		Task 4	
		No. of Days	Labor Cost ($)	No. of Days	Labor Cost ($)	No. of Days	Labor Cost ($)	No. of Days	Labor Cost ($)
Project Manager	1,500	20	30,000	10	15,000	20	30,000	20	30,000
Energy Sector Specialist	1,200	40	48,000	5	6,000	10	12,000	0	0
LNG Supply Specialist	1,350	5	6,750	0	0	30	40,500	0	0
Gas Pipelines Specialist	1,000	5	5,000	30	30,000	5	5,000	5	5,000
LNG Shipping Specialist	1,350	2.5	3,375	0	0	30	40,500	5	6,750
Terminal Ops. Specialist	1,200	2.5	3,000	5	6,000	2.5	3,000	10	12,000
LNG Terminal Design Team	1,200	0	0	0	0	2.5	3,000	10	12,000
Economist/Financial Analysts	$800	10	8,000	2.5	2,000	2.5	2,000	0	0
Gas Utilization Analyst	$600	10	6,000	2.5	1,500	2.5	1,500	5	3,000
LNG Site Evaluators	$800	0	0	5	4,000	0	0	40	32,000
Technical/Logistics Support	$400	80	32,000	60	24,000	60	24,000	40	16,000
Totals by Task (1-4)		**175**	**142,125**	**120**	**88,500**	**165**	**161,500**	**135**	**116,750**

Estimated Levels of Effort and Labor Costs (Tasks 5-10)

Labor Category	Daily Rate ($)	Task 5		Tasks 6		Task 7, 18, and 9		Task 10 (Final Report)		**Totals**	
		No. of Days	Labor Cost ($)	No. of Days	Labor Cost ($)	No. of Days	Labor Cost ($)	No. of Days	Labor Cost ($)	**No. of Days**	**Labor Cost ($)**
Project Manager	1,500	10	15,000	10	15,000	10	15,000	20	30,000	**120**	**180,000**
Energy Sector Specialist	1,200	0	0	0	0	5	6,000	5	6,000	**65**	**78,000**
LNG Supply Specialist	1,350	0	0	10	13,500	2.5	3,375	5	6,750	**52.5**	**70,875**
Gas Pipelines Specialist	1,000	10	10,000	5	5,000	2.5	2,500	5	5,000	**67.5**	**67,500**
LNG Shipping Specialist	1,350	0	0	10	13,500	2.5	3,375	5	6,750	**55**	**74,250**
Terminal Ops. Specialist	1,200	20	24,000	5	6,000	2.5	3,000	5	6,000	**52.5**	**63,000**
LNG Terminal Design Team	1,200	60	72,000	5	6,000	2.5	3,000	5	6,000	**85**	**102,000**
Economist/Financial Analysts	$800	5	4,000	15	12,000	5	4,000	5	4,000	**45**	**36,000**
Gas Utilization Analyst	$600	0	0	0	0	2.5	1,500	5	3,000	**27.5**	**16,500**
LNG Site Evaluators	$800	5	4,000	0	0	5	4,000	5	4,000	**60**	**48,000**
Technical/Logistics Support	$400	80	32,000	30	12,000	10	4,000	40	16,000	**400**	**160,000**
Totals by Task (5-10)		**190**	**161,000**	**90**	**83,000**	**50**	**49,750**	**105**	**93,500**	**1030**	**896,125**

BUDGET ESTIMATE – ROMANIA LNG PROJECT FEASIBILITY STUDY (CONTINUED)

Other Direct Costs (Tasks 1 - 10)

Cost Item	Basis	Project Kickoff & Task 1	Task 2	New Task 3	Task 4	Task 5	Tasks 6	Tasks 7, 8 & 9	Task 10	*Totals*
No. of Air Trips (U.S-Rom.)	---	3	2	4	3	3	1	1	2	**19**
Air Fares	$2,250/Trip	$6,750	$4,500	$9,000	$6,750	$6,750	$2,250	$2,250	$4,500	**$42,750**
Addl. International Trips	---	0	0	3	0	0	1	0	0	**4**
Intl. Air Fares (Aver. Est.)	$3,000/Trip	$0	$0	$9,000	$0	$0	$3,000	$0	$0	**$12,000**
No. of Days Abroad	---	35	28	56	35	21	14	7	14	**210**
Per-diem	$250/Day	$8,750	$7,000	$14,000	$8,750	$5,250	$3,500	$1,750	$3,500	**$52,500**
In-region Travel (Air)	---	3	3	2	3	3	1	1	1	**17**
In-region Air Fares	$250/Trip	$750	$750	$500	$750	$750	$250	$250	$250	**$4,250**
In-region Travel (Ground)	No. of Miles	500	1,000	1,000	750	500	250	250	125	**4,375**
Addl. Travel Costs	$2/mile	$1,000	$2,000	$2,000	$1,500	$1,000	$500	$500	$250	**$8,750**
Computer, phones, mail etc	No. of Person Days	175	120	165	135	190	90	50	105	**1030**
All Communication Costs	$20/person-day	$3,500	$2,400	$3,300	$2,700	$3,800	$1,800	$1,000	$2,100	**$20,600**
Translation & Interpretation	Lump-sum per task	$1,000	$1,000	$2,000	$1,000	$1,000	$2,000	$2,000	$2,000	**$12,000**
Reports & Deliverables	Lump-sum per task	$1,000	$1,000	$1,000	$2,000	$2,000	$1,000	$1,000	$4,000	**$13,000**
	Total ODCs	**$22,750**	**$18,650**	**$40,800**	**$23,450**	**$20,550**	**$14,300**	**$8,750**	**$16,600**	**$165,850**

BUDGET SUMMARY

Labor Costs $896,125
ODCs.....$165,850
Total Cost.....$1,061,975

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ANNEX 3

USTDA NATIONALITY REQUIREMENTS

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

NATIONALITY, SOURCE, AND ORIGIN REQUIREMENTS

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

USTDA STANDARD RULE (GRANT AGREEMENT STANDARD LANGUAGE):

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

NATIONALITY:

1) Rule

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

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

2) Application

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

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

3) Definitions

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

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

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

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

SOURCE AND ORIGIN:

1) Rule

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

2) Application

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

3) Definitions

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

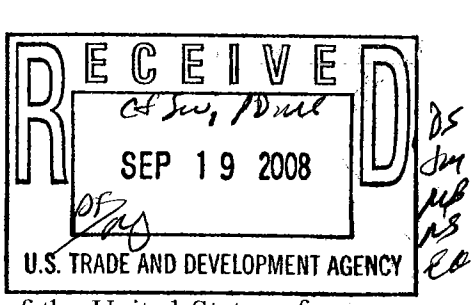
"Origin” means the place of production, through manufacturing, assembly or otherwise.

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

ANNEX 4

USTDA GRANT AGREEMENT, INCLUDING TERMS OF REFERENCE AND MANDATORY CONTRACT CLAUSES

08-81029A



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 Romgaz S.A. ("Grantee"). USTDA agrees to provide the Grantee under the terms of this Agreement US$1,061,975 ("USTDA Grant") to fund the cost of goods and services required for a feasibility study ("Study") on the proposed LNG Import Terminal Project ("Project") in Romania ("Host Country").

1. USTDA Funding

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

2. Terms of Reference

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

3. Standards of Conduct

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

4. Grantee Responsibilities

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

5. USTDA as Financier

(A) USTDA Approval of Competitive Selection Procedures

Selection of the U.S. Contractor shall be carried out by the Grantee according to its established procedures for the competitive selection of contractors with advance notice of the procurement published online through *Federal Business Opportunities (www.fedbizopps.gov)*. Upon request, the Grantee will submit these contracting procedures and related documents to USTDA for information and/or approval.

(B) USTDA Approval of Contractor Selection

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

(C) USTDA Approval of Contract Between Grantee and Contractor

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

(D) USTDA Not a Party to the Contract

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

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

(E) Grant Agreement Controlling

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

6. Disbursement Procedures

(A) USTDA Approval of Contract Required

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

(B) Contractor Invoice Requirements

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

7. Effective Date

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

8. Study Schedule

(A) Study Completion Date

The completion date for the Study, which is March 31, 2010, is the date by which the parties estimate that the Study will have been completed.

(B) Time Limitation on Disbursement of USTDA Grant Funds

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

9. USTDA Mandatory Clauses

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

10. Use of U.S. Carriers

(A) Air

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

(B) Marine

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

11. Nationality, Source and Origin

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

12. Taxes

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

13. Cooperation Between Parties and Follow-Up

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

14. Implementation Letters

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

15. Recordkeeping and Audit

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

16. Representation of Parties

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

17. Addresses of Record for Parties

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

To: Mr. Francisc Toth
General Manager
S.N.G.N. Romgaz S.A.
551025, str. Unirii nr. 4
Medias, jud. Sibiu
Romania

Phone: +40-269-201020
Fax: +40-269-846901

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

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

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

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

Appropriation No.:	118/91001
Activity No.:	200881029A
Reservation No.:	2008810053
Grant No.:	GH2008810013
Amount:	$395,000

Appropriation No.:	11X1001
Activity No.:	200881029A
Reservation No.:	2008810053
Grant No.:	GH2008810013
Amount:	$483,588.68

Appropriation No.:	114/91001
Activity No.:	200881029A
Reservation No.:	2008810053
Grant No.:	GH2008810013
Amount:	$183,386.32

18. Termination Clause

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

19. Non-waiver of Rights and Remedies

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

20. U.S. Technology and Equipment

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

[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK]

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

For the Government of the United States of America

By: _____

Date: 9/16/08

For Romgaz S.A.

By: _____

Date: 16.09.2008

Witnessed:

By: _____

Witnessed:

By: _____

Annex I -- Terms of Reference

Annex II -- USTDA Mandatory Clauses

Annex I

Terms of Reference

Objectives of the Feasibility Study

1. To assess the potential demand and markets for LNG in Romania and the region, as well as the future availability (volumes, pricing, timing and technology) of LNG supplies to the region, and to determine the size and type of the LNG import terminal.
2. To determine other infrastructure development needs of the region, including the reconstruction and improvement of Romania's National Gas Transmission System.
3. To conduct technical, economic and financial analyses in order to confirm the feasibility of the LNG Import Terminal Project ("Project"), and to develop an implementation plan for the Project.

Scope of Work

TASK 1 Potential LNG Demand and Markets in Romania and the Region

The Contractor shall assess the potential demand and markets for LNG in Romania and the region by undertaking the following subtasks and activities:

1.1 Analysis of the current and projected Romanian and regional natural gas consumption and import requirements. This subtask shall involve as a minimum the following activities:

1.1.1 Obtain from the Ministry of Economy and Finance (MOEF) and other agencies of the Government of Romania (GOR) all relevant data, policy documents, analyses and future projections of the natural gas import requirements of Romania. The Grantee will assist the Contractor in gathering this information and in holding meetings to discuss the information with the appropriate specialists at the MOEF, the National Agency for Mineral Resources, and the National Regulatory Authority for Energy (ANRE). The Grantee will also share with the Contractor the results of any relevant research performed for or by the Grantee.

1.1.2 Review and update the information obtained in Activity 1.1.1 by contacting a representative cross-section of major Romanian gas sector entities involved in oil and gas exploration and in natural gas production, storage, transportation, supply, and distribution. The Contractor shall also review the information on consumption of natural gas with major industrial users, including, but not limited to, the users of natural gas as fuel for heat and electricity

production, and the manufacturers of fertilizers. The Grantee will assist in this activity by enabling the Contractor to contact and have productive discussions with these entities.

1.1.3 In coordination with the Grantee, the Contractor shall identify and evaluate the regional markets for imported natural gas that can be potentially served by Romania's pipeline infrastructure, existing and planned, for supplying natural gas to the region.

1.1.4 Verify and complete the information gathered in Activities 1.1.1 – 1.1.3 by referring to key reports on gas imports and transportation published by the World Bank, the European Union, the International Energy Agency and other entities that are active in monitoring recent developments in the energy sectors of Romania and the region.

1.1.5 Estimate the anticipated future natural gas import requirements of Romania and the region, and the associated demand-supply gaps and pricing trends, for 2010, 2015 and 2020, that can be addressed by the proposed LNG import terminal.

1.2 Assess the receptivity and off-take potential for LNG among the major suppliers, distributors and users of natural gas in Romania and the region, and the sensitivity of these markets to varying LNG economics on both absolute and competitive bases. In making this assessment, the Contractor shall consider the following entities, at a minimum:

1.2.1 Suppliers and distributors of natural gas to at least 90% of these markets in Romania, including the smaller entities that are expected to grow sufficiently in the future to fall within these groups; and

1.2.2 Large-scale industrial purchasers of natural gas in Romania, as identified by Subtask 1.1, and other manufacturers identified by the Grantee as being potentially interested in LNG as an alternative source of natural gas.

1.3 As an extension of Subtasks 1.1 and 1.2, identify the needs for developing other infrastructure (gas pipelines and storage facilities, roads, communication infrastructure, etc.) in Romania, and on its borders with other countries, in order to promote gas utilization in the region and support LNG imports.

DELIVERABLE: Task 1 Report, containing a summary of the information gathered by the Contractor and details of the work performed in the task, including findings on future gas import requirements as well as potential LNG demand and markets in Romania and the region.

TASK 2 National Gas Transmission System (NTS)

The Contractor shall evaluate the readiness of Romania's NTS to receive additional supplies of natural gas from the Project and to transport these supplies to the existing and future gas markets in Romania and the region as determined in Task 1. In performing this task, the Contractor shall work closely with Transgaz, the GOR-owned operator of the national gas transmission system, and undertake the following subtasks and activities:

2.1 The Contractor shall outline the implications for the future operations and performance of the NTS based on the system's reception of natural gas at different rates and in different periods of operation from the LNG import terminal as indicated by the findings of Task 1. The implications of the system receiving natural gas from alternate new sources (for example, the Nabucco pipeline project) shall also be examined. In this subtask, the Contractor shall also review information provided by Transgaz on the condition and operability of the transmission pipelines, and on the expected lives of compressor and metering stations in the system.

2.2 Based on the results of Subtask 2.1 and further discussions with Transgaz on its current projects and plans for restructuring and improving the system, the Contractor shall identify and describe additional improvements required in order for the system to function optimally in connection with the LNG import terminal Project.

2.3 In conjunction with Subtask 2.2 and by working with Transgaz and the Grantee, the Contractor shall identify and assess the possibilities for Romania to establish new cross-border interconnections, in particular to improve the feasibility of the Project.

2.4 With reference to the findings of Subtasks 2.1 – 2.3, the Contractor shall provide rough order-of-magnitude (ROM) estimates of the investments required at Transgaz for upgrading the NTS.

DELIVERABLE: Task 2 Report, describing and evaluating the NTS and specifying the major required improvements to the system, including cost estimates for these improvements.

TASK 3 LNG Supplies and Other Future Natural Gas Alternatives

The Contractor shall assess the future availability of LNG supplies (volumes, pricing, timing and technology), in terms of the availability of LNG production capacity and shipping, and compare LNG with alternative energy resources that might exist for Romania and the region. This task shall include the following subtasks and activities:

3.1 The Contractor shall make a general assessment of the present and future availability and pricing of LNG production capacity for Romania and the

region. This will include a review of LNG producers in North Africa (Egypt, Libya, and Algeria) and the Middle East (Qatar, Abu Dhabi, Oman, and the Yemen), as well as other potential suppliers in the Atlantic Basin (West Africa, Trinidad, Venezuela and Norway). Alternative options of purchasing LNG directly from existing projects or from an aggregator (such as British Gas, Shell or Total) shall also be evaluated, along with the option of sourcing via the international gas trading community. This assessment shall include, at a minimum, the following activities:

3.1.1 Gathering of information on the availability, timing and probable terms of LNG supply:
- LNG production capacity in operation or under construction;
- Planned new natural gas liquefaction capacity;
- Existing contractual commitments, contract durations and quantities, volumetric and destination flexibility; and
- LNG purchases directly from a project or from an aggregator, either on a contractual or spot basis, and the advantages / disadvantages of such alternatives;

3.1.2 Pricing estimates on a free-on-board (FOB) basis;

3.1.3 An evaluation of the future competition for available LNG capacity from other buyers;

3.1.4 An analysis of current trends in pricing formulas, stakeholders' composition in the value chain, and timing and other hurdles; and

3.1.5 An evaluation of current receiving performance at LNG re-gasification terminals in Europe, including their use of installed capacity and operational efficiency.

3.2 Based on the most likely sources of LNG, the Contractor shall define for each case of potential availability of LNG production capacity the availability and pricing of LNG shipping capacity. Transportation, insurance, and financial cost estimates shall be provided separately.

3.2.1 This subtask will also require a review of world LNG gas carrier fleets, both existing and on order, and an analysis of the technologies and modalities available to transport and deliver LNG to the different types of receiving terminals to be considered in connection with the Project.

3.3 The Contractor shall analyze in economic terms other natural gas supply options to Romania and the region that might exist in the long-term. These options (to be selected jointly with the Grantee) shall be compared and contrasted with the LNG terminal in order to identify the advantages and disadvantages for each of them.

DELIVERABLE: Interim Report on the Feasibility Study, integrating the findings of Tasks 1-3 to determine the size and type of LNG import terminal to be evaluated in the remaining tasks of the Study.

TASK 4 **Site Evaluation; Environmental and Regulatory Reviews**

The Contractor shall evaluate the Port of Constanta and another prospective site on the Black Sea coastline of Romania, to be designated by the Grantee, as candidates for installing and operating the LNG Import Terminal. This task shall include the following subtasks and activities:

4.1 The evaluation of candidate sites for the Project shall involve, as a minimum, the following activities:

4.1.1 Collection of marine data for each site to determine the ease of marine navigation (ship approach and maneuvering);
4.1.2 Study of soil topography, seismic characteristics, and marine and soil erosion, as well as future port projects affecting the situation;
4.1.3 Determination (from existing regional data) of yearly profiles of air and seawater temperatures, as well as atmospheric pressure ranges and rates of change; and
4.1.4 Evaluation of space availability, marine safety, port security, and other environmental and topological constraints.

4.2 The Contractor shall conduct a preliminary review of the Project's potential environmental impact with reference to local requirements and those of multi-lateral lending agencies. This review shall identify potential negative impacts, discuss the extent to which they can be mitigated, and develop plans for full environmental impact assessment in anticipation of the Project moving forward to the implementation stage

4.3 A review shall be completed of all relevant local and international non-environmental regulations and requirements, with descriptions of all necessary follow-up steps to assure full compliance in case of Project implementation.

4.4 The Contractor shall perform a comparative risk and cost assessment of the sites considered under this task.

TASK 5 **Preliminary Design of LNG Terminals and Marine Facility**

The Contractor shall conduct a preliminary design of two alternative scenarios to receive, store, and re-gasify LNG at the site selected by Romgaz, and to transmit the gas through the existing network of pipelines or to new transmission/reception facilities. The design shall provide sufficient information to enable ROM cost estimates for constructing, operating and maintaining the LNG terminal, and the Contractor shall provide such ROM cost estimates. The design will include a plant layout, process descriptions, process design data, equipment data sheets, modes of operation, start-up and pre-commissioning costs, utilities requirements, instrumentation and controls requirements, storage tank requirements, an equipment list, FEED and EPC requirements, and a listing of potential U.S. suppliers of goods and services for the Project. The preliminary design shall be to international standards for LNG import terminals and shall include the following engineering details:

- *LNG Berthing / Jetty Design*: A conceptual design for one or more jetties and associated support facilities will be provided.
- *Terminal Capacity*: The projected gas requirements in various pipelines to be served by the new terminal will be reviewed and a recommendation will be made regarding the future capacity of the terminal.
- *LNG Terminal Layouts:* Physical layouts for the terminals will be prepared as well as for connections to the existing gas transmission pipelines or other facilities to receive natural gas from the terminal.
- *LNG Storage Designs:* A preliminary design for LNG storage will be prepared. Sizes and types of tanks will be chosen based principally on life-cycle economics as well as on reliability and safety considerations.
- *Impact of New Technology*: An assessment will be made of the readiness, availability over time, and potential impact of new and emerging technologies on the technical designs for the Project, with associated recommendations.
- *Unloading Designs:* The characteristics of the LNG tankers delivering the LNG will be defined. A preliminary design for the terminal unloading facilities will be prepared.
- *LNG Send-out Designs*: A preliminary design for LNG send-out facilities and processes will be prepared.
- *LNG Vapor Handling System*: The preliminary design will attempt to eliminate the need for flaring of vapors. A recommendation among seawater vaporizers, submerged combustion vaporizers, and intermediate fluid vaporizers will be made, based principally on lifetime economic and environmental considerations.
- *Fire & Hazard Protection:* The preliminary designs will incorporate all required elements for fire and hazard protection, and such non-required elements as are consistent with world-standard practices.
- *Utility Supply Study:* Required utilities such as electric power, nitrogen, cooling water, fresh water and waste treatment will be studied, and a recommendation for each with respect to on-site generation/production/treatment vs. sourcing from public utilities will be

made, based principally on lifetime economic, reliability and environmental considerations.

- *Other Infrastructure and Necessary Works*: Other infrastructure and works that may have to be evaluated under the preliminary design include:
  - Road bridge across the connection-canal between the sea-river basin and the iron-ore barge;
  - LNG pipelines bridge;
  - Access roads connection/junction for roads and bridge access platforms;
  - LNG loading ramps into railway/roadway tankers and river barges;
  - Railway and related embankment for the rail platform;
  - Road tankers platform, including embankments;
  - Access road from the rail and road tanker platforms to existing roads and barge loading (fluvial tankers) platforms; connections for utilities to the terminal site; and
  - Office and housing facilities as well as other construction needs, such as a fire station and material and equipment storage.

TASK 6 **Economic & Financial Analysis of the Project**

6.1 Economic Analysis: The Contractor shall perform a detailed economic analysis of the Project and make a recommendation to the Grantee concerning the overall economic viability of the Project. In performing this task, the Contractor shall utilize the findings on the demand, supply and pricing of natural gas and LNG from earlier tasks of the Study, the needs for infrastructure development in the region to support the Project, and the findings on the capital investment costs and operation and maintenance (O&M) costs for the LNG terminal. The Contractor shall apply mathematical models suitable for economic analysis of greenfield LNG projects, and for testing sensitivities regarding key Study assumptions and Project drivers, including the effect of sustained low gas prices on the overall Project economics, its returns on investment, and its level of safety for coverage of debt service obligations. The data used by these models shall include, but not be limited to, the following:

- Financing structure and financing costs;
- Exchange rates;
- Input costs (including ocean transportation and other related
- components);
- Cost and price inflation;
- Fixed and variable operating costs;
- Capital costs;
- Demand and throughput volumes;
- Market pricing; and
- Romanian tax and fiscal regime.

6.2 Financial Analysis: In this task, the Contractor shall first identify prospective sources of capital investment, including debt financing, and gather information on the views of the respective investing and lending organizations, both locally and internationally. The Contractor shall then arrange for the Grantee and other GOR representatives to participate in discussions with relevant international development finance sources, including (but not limited to) the World Bank, EBRD, IBRD, IFC, OPIC and the US Export-Import Bank in order to assess their requirements and determine their level of interest and willingness to make commitments contingent on favorable Study findings. With the approval of the Grantee, discussions may also have to be arranged with selected major gas and energy companies (particularly those in the prospective role of off-takers of the Project's gas) as potential supplemental equity investors in, financial guarantors of, and/or lenders to the Project.

DELIVERABLE: Task 6 Report on the economic viability and implementation financing needs of the Project, with a plan and recommendations on the optimal types, sources, and mix of financing.

TASK 7 U.S. Supplier Potential

The Contractor shall assess the potential for U.S. exports of goods and services to the proposed Project. The Contractor shall prepare a list of U.S. suppliers of major equipment and services required for the Project, including services required in the detailed design and construction phases (FEED and EPC) of the Project

TASK 8 Developmental Impact Analysis

The Contractor shall assess the development benefits associated with the Project and the methodology for measuring those benefits. The assessment shall include examples of the development benefits that would be expected in Romania and the region if the Project is implemented as outlined in the Final Report. The Contractor shall develop a methodology for assessing these impacts over time, and shall identify where to obtain this information in the future (e.g., GOR and other regional governments, the European Commission in Brussels, or the U.S. Embassy in Bucharest). The Contractor shall only list benefits in the categories that are applicable to the Project.

Specifically, the Contractor shall evaluate the categories listed below to determine which are likely to result from the Contractor's recommendations. Where possible, the Contractor shall include quantitative estimates. The categories to be considered are as follows:

Infrastructure: Estimate the expected scale of infrastructure development and improvements.

Human Capacity Building: Estimate the number and type of jobs that would be created if the Contractor's recommendations are implemented. Comment on any prospective

training recommended in the Final Report, including an estimate of the number of persons to be trained, type of training needed, and the desired outcome of the training.

Technology Transfer and Productivity Improvement: Discuss potential commercial contracts for licensing new technologies that are recommended, as well as the expected productivity benefits of any such technologies. More generally, discuss the expected efficiency gains related to the recommendations, such as improved systems or processes that enhance productivity or result in a more efficient use of resources.

Market-Oriented Reform: Discuss any market-oriented reforms that would facilitate implementation of the Project or that would result from Project implementation, such as any policy changes that would result in more transparent regulatory systems and institutions or increased competition.

Energy Security and Other Benefits: Discuss prospective indirect development impacts of the key recommendations, such as enhanced safety and economic benefits (including increases in investment and indirect job creation) that are not captured in the four categories listed above.

TASK 9 Implementation Plan

The Contractor shall provide for consideration by the Grantee and the GOR a Project implementation plan based on the findings of the entire Study, including the siting of the LNG import terminal and the technical, economic, and financial assessments of the Project. The main elements of this plan shall include business development, LNG market promotion, commencement of detailed engineering, and negotiations and contract agreements for LNG purchase and supply for the Project. The implementation plan shall also address the modifications required, if any, for the supply of natural gas in Romania and the region expected to benefit from the Project.

TASK 10 Final Report

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

Notes:

(1) The Contractor is responsible for compliance with U.S. export licensing requirements, if applicable, in the performance of the Terms of Reference.

(2) The Contractor and the Grantee shall be careful to ensure that the public version of the Final Report contains no security or confidential information.

(3) **The Grantee and USTDA shall have an irrevocable, worldwide, royalty-free, non-exclusive right to use and distribute the Final Report and all work product that is developed under these Terms of Reference.**

Annex II

USTDA Mandatory Contract Clauses

A. USTDA Mandatory Clauses Controlling

The parties to this contract acknowledge that this contract is funded in whole or in part by the U.S. Trade and Development Agency ("USTDA") under the Grant Agreement between the Government of the United States of America acting through USTDA and Romgaz S.A ("Client"), dated _____ ("Grant Agreement"). The Client has selected _____ ("Contractor") to perform the feasibility study ("Study") for the LNG Import Terminal Project ("Project") in Romania ("Host Country"). Notwithstanding any other provisions of this contract, the following USTDA mandatory contract clauses shall govern. All subcontracts entered into by Contractor funded or partially funded with USTDA Grant funds shall include these USTDA mandatory contract clauses, except for clauses B(1), G, H, I, and J. In addition, in the event of any inconsistency between the Grant Agreement and any contract or subcontract thereunder, the Grant Agreement shall be controlling.

B. USTDA as Financier

(1) USTDA Approval of Contract

All contracts funded under the Grant Agreement, and any amendments thereto, including assignments and changes in the Terms of Reference, must be approved by USTDA in writing in order to be effective with respect to the expenditure of USTDA Grant funds. USTDA will not authorize the disbursement of USTDA Grant funds until the contract has been formally approved by USTDA or until the contract conforms to modifications required by USTDA during the contract review process.

(2) USTDA Not a Party to the Contract

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

bar the Client or USTDA from asserting any right they might have against the Contractor, or relieve the Contractor of any liability which the Contractor might otherwise have to the Client or USTDA.

C. Nationality, Source and Origin

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

D. Recordkeeping and Audit

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

E. U.S. Carriers

(1) Air

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

(2) Marine

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

F. Workman's Compensation Insurance

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

G. Reporting Requirements

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

H. Disbursement Procedures

(1) USTDA Approval of Contract

Disbursement of Grant funds will be made only after USTDA approval of this contract. To make this review in a timely fashion, USTDA must receive from either the Client or the Contractor a photocopy of an English language version of a signed contract or a final negotiated draft version to the attention of the General Counsel's office at USTDA's address listed in Clause M below.

(2) Payment Schedule Requirements

A payment schedule for disbursement of Grant funds to the Contractor shall be included in this Contract. Such payment schedule must conform to the following USTDA requirements: (1) up to twenty percent (20%) of the total USTDA Grant amount may be used as a mobilization payment; (2) all other payments, with the exception of the final payment, shall be based upon contract performance milestones; and (3) the final payment may be no less than fifteen percent (15%) of the total USTDA Grant amount, payable upon receipt by USTDA of an approved Final Report in accordance with the specifications and quantities set forth in Clause I below. Invoicing procedures for all payments are described below.

(3) Contractor Invoice Requirements

USTDA will make all disbursements of USTDA Grant funds directly to the Contractor. The Contractor must provide USTDA with an ACH Vendor Enrollment Form (available from USTDA) with the first invoice. The Client shall request

disbursement of funds by USTDA to the Contractor for performance of the contract by submitting the following to USTDA:

(a) Contractor's Invoice

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

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

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

(ii) For contract performance milestone payments:

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

(iii) For final payment:

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

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

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

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

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

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

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

(c) USTDA Address for Disbursement Requests

Requests for disbursement shall be submitted by courier or mail to the attention of the Finance Department at USTDA's address listed in Clause M below.

(4) Termination

In the event that the Contract is terminated prior to completion, the Contractor will be eligible, subject to USTDA approval, for reasonable and documented costs which have been incurred in performing the Terms of Reference prior to termination, as well as reasonable wind down expenses. Reimbursement for such costs shall not exceed the total amount of undisbursed Grant funds. Likewise, in the event of such termination, USTDA is entitled to receive from the Contractor all USTDA Grant funds previously disbursed to the Contractor (including but not limited to mobilization payments) which exceed the reasonable and documented costs incurred in performing the Terms of Reference prior to termination.

I. USTDA Final Report

(1) Definition

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

(2) Final Report Submission Requirements

The Contractor shall provide the following to USTDA:

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

and

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

and

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

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

(3) Final Report Presentation

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

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

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

(b) The inside front cover of every Final Report shall contain USTDA's logo, USTDA's mailing and delivery addresses, and USTDA's mission statement.

Camera-ready copy of USTDA Final Report specifications will be available from USTDA upon request.

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

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

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

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

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

J. Modifications

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

K. Study Schedule

(1) Study Completion Date

The completion date for the Study, which is March 31, 2010, is the date by which the parties estimate that the Study will have been completed.

(2) Time Limitation on Disbursement of USTDA Grant Funds

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

L. Business Practices

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

M. USTDA Address and Fiscal Data

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

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

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

Fiscal Data:

Appropriation No.:	118/91001
Activity No.:	200881029A
Reservation No.:	2008810053
Grant No.:	GH2008810013
Amount:	$395,000

Appropriation No.:	11X1001
Activity No.:	200881029A
Reservation No.:	2008810053
Grant No.:	GH2008810013

Amount:	$483,588.68

Appropriation No.:	114/91001
Activity No.:	200881029A
Reservation No.:	2008810053
Grant No.:	GH2008810013
Amount:	$183,386.32

N. Definitions

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

O. Taxes

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