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3 de marzo de 2004

Señor Javier Gonzalo Cuevas
Ministro de Hacienda
Ministerio de Hacienda
Avenida Mariscal Santacruz
Esquina Oruro
La Paz, Bolivia

Ref. Cooperación Técnica No Reembolsable No.
ATN/SF-8619-BO. Apoyo al Plan de
Electrificación Rural.

Estimado señor Ministro:

Tenemos el agrado de comunicarle a usted que el Banco Interamericano de Desarrollo aprobó la utilización de recursos provenientes del Fondo para Operaciones Especiales para el otorgamiento de una Cooperación Técnica no Reembolsable, hasta por el monto de cien mil dólares (US\$100.000), con el objeto de contratar servicios de consultoría para apoyar en la ejecución del proyecto del rubro, de acuerdo con el Plan de Operaciones y términos de referencia adjuntos, redactados en inglés, aprobados el 27 de enero de 2004.

Asimismo, y conforme a lo acordado, el Gobierno de Bolivia, por intermedio del Viceministerio de Electricidad y Energías Alternativas del Ministerio de Servicios y Obras Públicas, se compromete a colaborar con los consultores en la realización de sus tareas y a proveer espacio físico necesario, comunicación telefónica, y el apoyo técnico logístico y secretarial necesario para la ejecución del Proyecto.

Igualmente, de acuerdo con el Plan de Operaciones y Términos de Referencia arriba mencionados, el Banco procederá a celebrar los contratos de consultoría necesarios para la ejecución del Proyecto.

Finalmente, cabe aclarar que el financiamiento de esta Cooperación Técnica no implica en forma alguna un compromiso de parte del Banco de financiar total o parcialmente cualquier programa, proyecto o servicio que directa o indirectamente pudiera resultar de la ejecución de la misma.

ATN/SF-8619-BO

Para manifestar su aceptación a los términos y condiciones establecidos en esta carta, le ruego firmar y fechar los dos ejemplares de la misma y devolver al Banco uno de ellos. La fecha que figure al pie de su firma constituirá la fecha de vigencia de esta carta.

Atentamente,

(f)

Carlos Melo
Representante del Banco en Bolivia

De acuerdo:

(f)

Javier Gonzalo Cuevas
Ministro de Hacienda

Fecha: 2 de mayo de 2004

PLAN OF OPERATIONS
FUND FOR SPECIAL OPERATIONS – FSO

- Title of the project: Support to the Bolivian Rural Electrification Program
- Project number: BO-T1004
- Country: Bolivia
- Team Leader/Members: Ricardo Pinheiro, RE1/FI1; Rafael M. Acevedo, RE1/FI1; Dana Martin, LEG/OPR, Andrés Cossio, COF/CBO; Arnaldo Vieira de Carvalho, consultant
- Beneficiary entity: Vice-Ministerio de Electricidad y Energías Alternativas – VEEA
- Requesting/executing agency: same as above
- Financing Plan - Total amount: *US\$ 130,000*
 - Amount to be financed by FSO funds (non-reimbursable): *US\$ 100,000*
 - Amount to be financed by local counterpart: *US\$ 30,000*
- Date of Request: February 05, 2003
- Execution Period: 6 months

I. BACKGROUND

- 1.1 It is very difficult to improve family income, educational and health levels, economic productivity and rural development without access to electricity. In general, there is no alternative in rural areas to the traditional energy sources such as firewood, candles and animal or human labor. When access to kerosene and batteries is possible, the costs are even higher and basic needs are compromised.
- 1.2 Due to the difficulties presented to new privatized utilities in expanding their services to rural areas, either for grid-connected or off-grid consumers, specially for low income clients, the Government of Bolivia - GOB has given high priority to rural energy projects and is developing means to create proper conditions to attract both public and private sector investment to participate in rural electrification projects.
- 1.3 In this context the GOB has launched the Bolivia Rural Electrification Program, known as “Plan Bolivia de Electrificación Rural – PLABER” with a target of providing access to electricity services to 200,000 additional families until 2007. The GOB succeeded in obtaining support to fund specific activities of PLABER from several international donors and agencies, such as the Corporación Andina de Fomento - CAF, World Bank, Global Environment Facility/United Nations Development Program – GEF/UNDP, Kreditanstalt für Wiederaufbau - KfW, among others.
- 1.4 However, PLABER lacks a National Master Plan to help direct, organize, optimize, integrate and coordinate more efficiently the implementation of the several initiatives already in place and the future ones to come, especially projects based on natural gas considering the relevant reserves existing in the country. In addition, the GOB wants to identify key investment projects to optimize the grid.

II. OBJECTIVES AND DESCRIPTION

- 2.1 The objective of the present TC project is to develop a National Master Plan for natural gas projects and key investment projects to optimize the grid, under the “Plan Bolivia de Electrificación Rural” - PLABER, covering technical, economical, financial, institutional, environmental and regulatory issues relevant to the process of increasing the rural electricity coverage nationwide in a sustainable way. The project will also detail national and Departmental targets for the short and long term, with corresponding budget and time schedule for natural gas projects and key investment projects to optimize the grid.
- 2.2 The activities to be developed by this TC will include reviewing the existing legislation, standards, procedures, studies, reports and other documentation related to planning, implementation and evaluation of rural electrification projects in Bolivia, with emphasis on natural gas solutions, and interviews with major public and private stakeholders.
- 2.3 The National Master Plan to be developed will provide the necessary guidelines to increase rural electricity coverage, for natural gas projects and for key investment projects, in order to optimize the grid in a sustainable manner. It will take into consideration the Departmental Indicative Plans and technical, legal, economical, financial, institutional, environmental and regulatory issues, and will define:
- National, Departmental and local targets for 2, 5 and 10 years
 - Detailed budget and time schedule
 - Prioritized key infrastructure projects
 - Degree of participation of natural gas solutions employing different technologies
 - Improvements in current practices, arrangements, regulations, procedures methodologies and criteria being employed for the selection, prioritization and implementation of rural electrification projects
 - Plan for capacity building and institutional strengthening for major public entities and private stakeholders (Energy Service Providers)
 - Social and environmental impact evaluation analysis
- 2.4 This TC will identify key investment projects required for the optimization of the grid and develop a pipeline of rural electrification projects using natural gas, both for new connections and to replace consumption of Diesel oil in existing projects. The pre-feasibility analysis to be carried out will employ the current social and private net present value methodology (VANS/VANP), under the different conditions prevailing in the country, and considering other technical, economical, financial, institutional, environmental and regulatory issues, including:
- Alternative transportation systems for natural gas (pipelines, CNG, LNG)
 - Different system capacities and generation technologies (Diesel engines, gas turbines) and applicable tariffs and different business models arrangements
 - Possibility of using natural gas in the area of influence of the project for other purposes beyond power generation
- 2.5 In addition, this TC will identify and develop the complementary studies necessary for the preparation of a future Bank loan operation to finance specific infrastructure projects to increase the rural electrification in the country, such as:

- Definition of the scope of the loan components dedicated to natural gas solutions and key investment projects for the optimization of the grid (investment, capacity building, institutional strengthening, productive uses, complementary studies, etc)
 - Prepare selected chapters of the Project Report
 - Sizing of the loan components for natural gas and key investment projects for the optimization of the grid, for both goods and services
 - Definition of the terms of reference for short-term planning of the expansion of the electrical distribution system for selected utility companies
- 2.6 The results of this project will help direct, organize, optimize, integrate and coordinate more efficiently the implementation of the several initiatives already in place and the future ones to come in the rural electrification field, especially projects based on natural gas, contributing to the increase of this relevant energy resource in the domestic market, considering the large reserves existing in the country. The identification of key investment projects for the optimization of the grid will help eliminate bottlenecks for the expansion of PLABER in a more efficient manner.

III. EXECUTION AND BUDGET

- 3.1 The executing agency for this TC will be the Vice-Ministerio de Electricidad y Energías Alternativas – VEEA, under the Ministerio de Servicios y Obras Públicas. Besides conducting the PLABER, VEEA is also responsible for monitoring the Departmental rural electrification plans, the preparation of rural electrification sectorial standards, the implementation of bilateral and multilateral programs and the interface with the Ministerio de Hacienda with respect to PLABER financing. In order to better coordinate with other TCs to be developed to support PLABER, the Bank will select and hire all consultants, following its procurement norms, in coordination with VEEA.
- 3.2 The total project cost will be US\$130,000, of which US\$100,000 will be from FSO resources. A more detailed breakdown of the proposed budget is provided in the following table:

Category	Requested amount from FSO funds	Counterpart Cost Share	TOTAL
<i>4 Senior consultants*</i>			
Honorarium: 100 working days x US\$500	50,000		50,000
<i>2 Junior consultants</i>			
Honorarium: 70 working days x US\$300	21,000		21,000
Per diem: 100 days x US\$ 132	13,200		13,200
International Travel: 6 tickets x US\$ 1,000	6,000		6,000
Local Travel : 10 tickets x US\$ 200	2,000		2,000
Other cost**:	7,800		7,800
General local support***:		30,000	30,000
TOTAL	100,000	30,000	130,000

Notes: * One of the senior consultants will act as project supervisor; ** Includes the costs for the organization of a workshop with the participation of representatives from the States (Departamentos), acquisition, lease or payment for special services, for such items as technical equipment, maps, laboratory exams, special printing services for reports, computer equipment, software and services, etc. Such "other costs" are acceptable when necessary for the performance of the consulting services; *** Comprehends local logistics for the consultants, including office space, secretarial services, communications, regular printing and copy services, supplies, etc.

IV. RESPONSIBILITY IN THE BANK

Headquarters: Ricardo Pinto Pinheiro, Finance and Basic Infrastructure, Region 1, telephone: (202) 623-1343, ricardopi@iadb.org

Country Office in Bolivia: Andrés Cossio, telephone: (5912) 235-1221; andresc@iadb.org.

V. RECOMMENDATION

Silvia B. Sagari, Division Chief for the project of the reference, recommends the approval of this operation and the use of FSO resources totaling up to US\$100,000 in order to finance the corresponding project.

BOLIVIA

SUPPORT TO THE BOLIVIAN RURAL ELECTRIFICATION PROGRAM

(BO-T1004)

Consulting Services Preliminary Terms of Reference

*Experts on Rural Electrification/Electricity Distribution
(Senior Consultants #1 and #2 and Junior Consultant #1)*

1. General Description

The Government of Bolivia (GOB) has launched the Bolivia Rural Electrification Program, known as “Plan Bolivia de Electrificación Rural – PLABER” with a target of providing access to electricity services to 200,000 additional families until the year 2007. However, PLABER lacks a National Master Plan to help direct, organize, optimize, integrate and coordinate more efficiently the implementation of the several initiatives already in place and the future ones to come, especially projects based on natural gas considering the relevant reserves existing in the country. In addition, the GOB wants to identify key investment projects to optimize the grid while expanding it.

In this context, the GOB has requested assistance from the Inter-American Development Bank (IDB) to develop a National Master Plan for natural gas projects and key investment projects to optimize the grid, under the PLABER, covering technical, economical, financial, institutional, environmental, legal and regulatory issues relevant to the process of increasing the rural electricity coverage nationwide in a sustainable way.

Assistance from 3 experts on Rural Electrification/Electricity Distribution will be needed. One of these experts (the Senior Consultant #1) will be the principal consultant of the project, acting also as technical coordinator of the project, providing technical guidance for all other project team members, under supervision of the Executing Agency.

Each of the 3 Rural Electrification/Electricity Distribution experts will be responsible for organizing his/her own budget and trip related costs and shall present an Action Plan with the split of work, which shall include a timetable of his/her activities in coordination with the other project team members, before starting his/her activities.

Besides the 3 Rural Electrification/Electricity Distribution experts, the project team will be formed by 2 experts on Natural Gas Transportation and Utilization (Senior Consultant #3 and Junior Consultant #2) and an environmental expert (Senior Consultant #4).

2. Objectives

The specific objective of the services to be provided by the experts on rural electrification/electricity distribution is to develop a National Master Plan for natural gas projects and key investment projects to optimize the grid, under the PLABER, integrating the results of the services provided by the other experts contributing to this project.

The Senior Consultant #1 that will act as technical coordinator of the project will provide overall technical project management, integrating all technical reports, providing technical guidance for the other project team members, besides developing specific technical activities as described below.

The overall objective of the services is to help the GOB to develop a National Master Plan for natural gas projects and key investment projects to optimize the grid, under the PLABER, covering technical, economical, financial, institutional, environmental, legal and regulatory issues relevant to the process of increasing the rural electricity coverage nationwide in a sustainable way.

3. Activities

Under supervision from the Executing Agency, the consultants will be responsible for developing the following specific activities, receiving support from other project team members, as described in the corresponding Terms of Reference of each consultant:

- 3.1 All consultants must become familiarized with present PLABER activities through a revision of the existing legislation, standards, procedures, studies, reports and other documentation on the planning, implementation and evaluation of rural electrification projects in Bolivia, with emphasis on natural gas solutions, and a series of interviews with major public and private market actors on issues such as:
 - Statistics and general information on the evolution of the rural electrification coverage
 - Data on the population without access to electricity services, including GIS data management
 - Rural electrification expansion plans, such as Departmental Indicative Plans
 - Ex-post evaluation of rural electrification projects employing different technologies
 - Market studies in different areas of the country
 - Incurred investment, operation, maintenance, management and administration costs
 - Evaluation of private sector participation in the investment
 - Institutional and ownership arrangements
 - Technical standards employed
 - Long-term sustainability of eligible projects
 - Least-cost analysis procedures, methodologies employed to define subsidies and incentives to increase private sector participation

- Regulatory constraints and trends
- Project eligibility criteria to receive governmental support
- Procurement procedures
- Environmental and social impact evaluation
- Local community and Departmental participation
- Productive uses of electricity
- Applicable tariffs
- Capacity building, institutional strengthening, entrepreneurial aspects
- Criteria and procedures for the selection of energy services providers
- Available financial resources and arrangements

3.2 The consultants will develop a National Master Plan to provide a guidance to increase the rural electricity coverage in a sustainable way, for natural gas projects. For this task they will count with the support of 2 experts on Natural Gas Transportation and Utilization (Senior Consultant #3 and Junior Consultant #2) and will take into consideration the Departmental Indicative Plans and technical, economical, financial, institutional, environmental, legal and regulatory issues, to define:

- National, Departmental and local targets for 2, 5 and 10 years
- Detailed budget and time schedule for the implementation of the Master Plan
- Degree of participation of natural gas solutions employing different technologies
- Improvements in the current practice, arrangements, regulation, procedures and methodologies being employed for the selection, prioritization and implementation of rural electrification projects
- Plan for capacity building and institutional strengthening for major public and private actors
- Environmental and social impact evaluation analysis (for this task the rural electrification/electricity distribution consultants will count with the support of one environmental expert - the Senior Consultant #4)

3.3 The consultants will identify key investments projects for the optimization of the grid and, with the support of the 2 experts on Natural Gas Transportation and Utilization (Senior Consultant #3 and Junior Consultant #2), will develop a pipeline of rural electrification projects using natural gas for new connections and to replace consumption of Diesel oil in existing projects, based on pre-feasibility analysis employing the current social and private net present value methodology (VANS/VANP) under different conditions prevailing in the country, and considering other technical, economical, financial, institutional, environmental, legal and regulatory issues, including:

- Alternative transportation systems for natural gas (pipelines, CNG, LNG)
- Different system capacities and generation technologies (Diesel engines, gas turbines)
- Applicable tariffs
- Different business models arrangements for services provision

- Possibility of using natural gas in the area of influence of the project for other purposes beyond power generation
- 3.4 In addition, the consultants will identify and develop complementary studies necessary for the preparation of a future Bank loan operation to finance specific infrastructure projects to increase the rural electrification in the country, such as:
- Definition of the scope of the loan components dedicated to natural gas solutions and key investment projects for the optimization of the grid (investment, capacity building, institutional strengthening, productive uses, complementary studies, etc)
 - Prepare selected chapters of the Project Report
 - Sizing of the loan components for natural gas and key investment projects for the optimization of the grid, for both goods and services
 - Definition of the terms of reference for short-term planning of the expansion of the electrical distribution system for selected utility companies

4. Products

Intermediate and final reports, integrating all reports submitted by the other project team members:

- a) Diagnostic of the situation related to natural gas solutions and key investment projects for the optimization of the grid
 - Review of current institutional and property arrangements, regulation, procedures and methodologies
 - Review of overall results of program implementation (evaluation of existing projects, incurred costs on infrastructure, operation and maintenance, commercialization, energy purchase/sales and administration, other indicators)
 - Characterization of the rural energy market (existing energy resources and demand; market participation of different market actors; specific needs and recommendations regarding the demand and supply of rural energy services; ability/willingness to pay for present and future energy services; client satisfaction; potential productive energy applications to increase family income; relevant market barriers, mechanisms being used by stakeholders to overcome these barriers.)
- b) Proposal for improvements of the existing practice, arrangements, regulation, procedures and methodologies related to natural gas solutions and key investment projects for the optimization of the grid
 - Improvements in the current arrangements, regulation, procedures and methodologies being employed for the selection, prioritization and implementation of rural electrification projects.
 - Simulation of the improvements and assessment of impacts and the feasibility for its implementation
 - Review of the tariff structure, methodologies for definition of subsidies levels and project selection criteria.

- c) National Master Plan for natural gas projects
- Description of alternative transportation systems for natural gas (pipelines, CNG, LNG) covering technical, economical, financial, institutional, environmental, legal and regulatory issues
 - Evaluation of the impact of different system capacities and generation technologies (Diesel engines, gas turbines)
 - Applicable tariffs
 - Different business models arrangements for services provision
 - Possibility of using natural gas in the area of influence of the project for other purposes beyond power generation
 - Pipeline of rural electrification projects using natural gas and criteria for prioritizing projects
 - National, Departmental and local targets for 2, 5 and 10 years
 - Detailed budget and time schedule for the implementation of the Master Plan
 - Degree of participation of natural gas solutions employing different technologies
 - Plan for capacity building and institutional strengthening for major public and private actors
 - Environmental and social impact evaluation analysis
- d) Key investment projects for the optimization of the grid
- Evaluation of the present and future distribution system
 - Detailed budget and time schedule for the implementation of key investments projects
 - Environmental and social impact evaluation analysis
 - National, Departmental and local targets
- e) Inputs for loan preparation
- Definition of the scope of the loan components dedicated to natural gas solutions and key investment projects for the optimization of the grid (investment, capacity building, institutional strengthening, productive uses, complementary studies, etc)
 - Selected chapters of the Project Report
 - Sizing of the loan components for natural gas and key investment projects for the optimization of the grid, for both goods and services
 - Definition of the terms of reference for short-term planning of the expansion of the electrical distribution system for selected utility companies

BOLIVIA

SUPPORT TO THE BOLIVIAN RURAL ELECTRIFICATION PROGRAM

(BO-T1004)

Consulting Services Preliminary Terms of Reference

Experts on Natural Gas Transportation and Utilization (Senior Consultant #3 and Junior Consultant #2)

1. General Description

The Government of Bolivia (GOB) has launched the Bolivia Rural Electrification Program, known as “Plan Bolivia de Electrificación Rural – PLABER” with a target of providing access to electricity services to 200,000 additional families until the year 2007. However, PLABER lacks a National Master Plan to help direct, organize, optimize, integrate and coordinate more efficiently the implementation of the several initiatives already in place and the future ones to come, especially projects based on natural gas considering the relevant reserves existing in the country. In addition, the GOB wants to identify key investment projects to optimize the grid while expanding it.

In this context, the GOB has requested assistance from the Inter-American Development Bank (IDB) to develop a National Master Plan for natural gas projects and key investment projects to optimize the grid, under the PLABER, covering technical, economical, financial, institutional, environmental, legal and regulatory issues relevant to the process of increasing the rural electricity coverage nationwide in a sustainable way.

Assistance from 2 experts on natural gas transportation and utilization for rural electrification will be needed. One of these experts (the Senior Consultant #3) will be the principal consultant of the activities related to Natural Gas Transportation and Utilization, providing technical guidance for all other project team members, under supervision of the Executing Agency.

Each expert will be responsible for organizing his/her own budget and trip related costs and shall present an Action Plan with the split of work, which shall include a timetable of his/her activities in coordination with the other project team members, before starting his/her activities.

Besides the 2 experts on Natural Gas Transportation and Utilization, the project team will be formed by 3 Rural Electrification/Electricity Distribution experts (Senior Consultants #1 and #2 and Junior Consultant #1) and an environmental expert (Senior Consultant #4).

2. Objectives

The specific objective of the services to be provided by the 2 experts on natural gas transportation and utilization for rural electrification is to develop base studies and evaluations as input to the preparation of the National Master Plan for natural gas projects, under the PLABER.

The Senior Consultant #3 that will act as technical coordinator of the activities related to natural gas transportation and utilization and will provide overall technical management, integrating technical reports on this subject, providing technical guidance for the other project team members, besides developing specific technical activities as described below.

The overall objective of the services is to help the GOB to develop a National Master Plan for natural gas projects and key investment projects to optimize the grid, under the PLABER, covering technical, economical, financial, institutional, environmental, legal and regulatory issues relevant to the process of increasing the rural electricity coverage nationwide in a sustainable way.

3. Activities

Under supervision from the Executing Agency, the consultants will be responsible for developing the following specific activities, receiving support from other project team members, as described in the corresponding Terms of Reference of each consultant:

- 3.1 All consultants must become familiarized with present PLABER activities through a revision of the existing legislation, standards, procedures, studies, reports and other documentation on the planning, implementation and evaluation of rural electrification projects in Bolivia, with emphasis on natural gas solutions, and a series of interviews with major public and private market actors on issues such as:
 - Statistics and general information on the evolution of the rural electrification coverage
 - Data on the population without access to electricity services, including GIS data management
 - Rural electrification expansion plans, such as Departmental Indicative Plans
 - Ex-post evaluation of rural electrification projects employing different technologies
 - Market studies in different areas of the country
 - Incurred investment, operation, maintenance, management and administration costs
 - Evaluation of private sector participation in the investment
 - Institutional and ownership arrangements
 - Technical standards employed
 - Long-term sustainability of eligible projects

- Least-cost analysis procedures, methodologies employed to define subsidies and incentives to increase private sector participation
 - Regulatory constraints and trends
 - Project eligibility criteria to receive governmental support
 - Procurement procedures
 - Environmental and social impact evaluation
 - Local community and Departmental participation
 - Productive uses of electricity
 - Applicable tariffs
 - Capacity building, institutional strengthening, entrepreneurial aspects
 - Criteria and procedures for the selection of energy services providers
 - Available financial resources and arrangements
- 3.2 The consultants will develop basic inputs for a National Master Plan to provide a guidance to increase the rural electricity coverage in a sustainable way, for natural gas projects. They will take into consideration the Departmental Indicative Plans and technical, economical, financial, institutional, environmental, legal and regulatory issues, to define:
- National, Departmental and local targets for 2, 5 and 10 years
 - Detailed budget and time schedule for the implementation of the Master Plan
 - Degree of participation of natural gas solutions employing different technologies
 - Capacity building and institutional strengthening plan for major public and private actors
 - Environmental and social impact evaluation analysis (for this task they will count with the support of an environmental expert - the Senior Consultant #4)
- 3.3 The consultants will develop a pipeline of rural electrification projects using natural gas for new connections and to replace consumption of Diesel oil in existing projects, based on pre-feasibility analysis employing the current social and private net present value methodology (VANS/VANP) under different conditions prevailing in the country, and considering other technical, economical, financial, institutional, environmental, legal and regulatory issues, including:
- Alternative transportation systems for natural gas (pipelines, CNG, LNG)
 - Different system capacities and generation technologies (Diesel engines, gas turbines)
 - Applicable tariffs
 - Different business models arrangements for services provision
 - Possibility of using natural gas in the area of influence of the project for other purposes beyond power generation
- 3.4 In addition, the consultants will identify and develop complementary studies necessary for the preparation of a future Bank loan operation to finance specific infrastructure projects to increase the rural electrification in the country, such as:

- Definition of the scope of the loan component dedicated to natural gas solutions (investment, capacity building, institutional strengthening, productive uses, complementary studies, etc)
- Prepare selected chapters of the Project Report
- Sizing of the loan component for natural gas, for both goods and services

4. Products

Intermediate and final reports on natural transportation and utilization, and contribution to the intermediate and final reports submitted by the other project team members:

- a) Diagnostic of the situation related to natural gas solutions
 - Review of current institutional and property arrangements, regulation, procedures and methodologies
 - Review of overall results of program implementation (evaluation of existing projects, incurred costs on infrastructure, operation and maintenance, commercialization, energy purchase/sales and administration, other indicators)
 - Characterization of the rural energy market (existing energy resources and demand; market participation of different market actors; specific needs and recommendations regarding the demand and supply of rural energy services; ability/willingness to pay for present and future energy services; client satisfaction; potential productive energy applications to increase family income; relevant market barriers, mechanisms being used by stakeholders to overcome these barriers.)
- b) Proposal for improvements of the existing practice, arrangements, regulation, procedures and methodologies related to natural gas solutions
 - Improvements in the current arrangements, regulation, procedures and methodologies being employed for the selection, prioritization and implementation of rural electrification projects
 - Simulation of the improvements and assessment of impacts and the feasibility for its implementation
 - Review of the tariff structure, methodologies for definition of subsidies levels and project selection criteria.
- c) National Master Plan for natural gas projects
 - Description of alternative transportation systems for natural gas (pipelines, CNG, LNG) covering technical, economical, financial, institutional, environmental, legal and regulatory issues
 - Evaluation of the impact of different system capacities and generation technologies (Diesel engines, gas turbines)
 - Applicable tariffs
 - Different business models arrangements for services provision
 - Possibility of using natural gas in the area of influence of the project for other purposes beyond power generation

- Pipeline of rural electrification projects using natural gas and criteria for prioritizing projects
- National, Departmental and local targets for 2, 5 and 10 years
- Detailed budget and time schedule for the implementation of the Master Plan
- Degree of participation of natural gas solutions employing different technologies
- Plan for capacity building and institutional strengthening for major public and private actors
- Environmental and social impact evaluation analysis

d) Inputs for loan preparation

- Definition of the scope of the loan component dedicated to natural gas solutions (investment, capacity building, institutional strengthening, productive uses, complementary studies, etc)
- Selected chapters of the Project Report
- Sizing of the loan component for natural gas, for both goods and services

BOLIVIA
SUPPORT TO THE BOLIVIAN RURAL ELECTRIFICATION PROGRAM
(BO-T1004)

Consulting Services Preliminary Terms of Reference

Environmental Expert (Senior Consultant #4)

1. General Description

The Government of Bolivia (GOB) has launched the Bolivia Rural Electrification Program, known as “Plan Bolivia de Electrificación Rural – PLABER” with a target of providing access to electricity services to 200,000 additional families until the year 2007. However, PLABER lacks a National Master Plan to help direct, organize, optimize, integrate and coordinate more efficiently the implementation of the several initiatives already in place and the future ones to come, especially projects based on natural gas considering the relevant reserves existing in the country. In addition, the GOB wants to identify key investment projects to optimize the grid while expanding it.

In this context, the GOB has requested assistance from the Inter-American Development Bank (IDB) to develop a National Master Plan for natural gas projects and key investment projects to optimize the grid, under the PLABER, covering technical, economical, financial, institutional, environmental, legal and regulatory issues relevant to the process of increasing the rural electricity coverage nationwide in a sustainable way.

Assistance from an Environmental Expert within the rural energy sector and natural gas transportation and utilization will be needed. The expert will be the principal environmental consultant of the project and he/she will be hired for specific tasks during the duration of the project providing support to other project team members, under supervision of the Executing Agency.

The expert will be responsible for organizing his/her own budget and trip related costs and shall present an Action Plan, which shall include a timetable of his/her activities in coordination with the other project team members, before starting his/her activities.

Besides the environmental expert the project team will be formed by 3 Rural Electrification/Electricity Distribution experts (Senior Consultants #1 and 2 and Junior Consultant #1) and 2 experts on Natural Gas Transportation and Utilization (Senior Consultant #3 and Junior Consultant #2).

2. Objectives

The specific objective of the services to be provided by the environmental expert is to ensure that all relevant activities developed and proposed in the project properly include the social-environmental variable, develop base studies and evaluations as input to the preparation of the National Master Plan for natural gas projects and the identification of key investment projects for grid optimization, under the PLABER, contributing to the services provided by the other members of the project team. The consultant shall provide guidelines that will help in prioritizing projects to be financed by IDB.

The overall objective of the services is to help the GOB to develop a National Master Plan for natural gas projects and key investment projects to optimize the grid, under the PLABER, covering technical, economical, financial, institutional, environmental, legal and regulatory issues relevant to the process of increasing the rural electricity coverage nationwide in a sustainable way.

3. Activities

Under supervision from the Executing Agency, the consultant will be responsible for developing the following specific activities:

- a) Review the current legal, institutional arrangements, regulation, procedures and methodologies, as well as the overall results of the program implementation so far, for both on and off-grid clients, under the point of view of environmental issues.
- b) Evaluate existing projects to gather information on environmental issues to establish the basis for conducting a feasibility analysis of a project loan.
- c) Develop basic support information on environmental issues, for both on and off-grid solutions.
- d) Prepare an environmental review of existing rural energy projects to be included in the loan proposal.
- e) Evaluate the environmental sustainability of planned projects and the corresponding institutional framework.
- f) Propose a methodology for social-environmental variables in the project selection criteria.
- g) Prepare environmental conclusions and findings indicating the scope and extent of environmental analysis required for future project consideration.

2. Products

Intermediate and final reports on environmental issues, and contributions to the overall intermediate and final reports on:

- a. Diagnostic of the situation.
 - Review of current legal, institutional and property arrangements, regulation, procedures and methodologies, under the point of view of environmental issues.

- Review of overall results of program implementation under the point of view of environmental issues.
 - Basic support information on environmental issues as required
- b. Recommendations and Loan Proposal.
- Environmental review of existing rural energy projects.
 - Environmental sustainability of planned projects and the corresponding institutional framework.
 - Environmental variables for project selection criteria and methodology for project selection
 - Environmental conclusions and findings.