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COLOMBIA

STRENGTHENING OF THE PROVISION OF ELECTRICITY SERVICE IN NON-INTERCONNECTED AREAS (ZNIs) IN COLOMBIA

(CO-T1071)

PLAN OF OPERATIONS

This document was prepared by the project team consisting of: José Ramón Gómez (INE/ENE), Project Team Leader; Alberto Levy (INE/ENE), Camilo López (INE/ENE); Daniel Torres (CAN/CCO); and Maria Jose Baptista (LEG/SGO).

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BASIC SOCIOECONOMIC DATA

For basic socioeconomic data, including public debt information, please refer to the following address:
http://www.iadb.org/RES/index.cfm?fuseaction=externallinks.countrydata

ABBREVIATIONS

CAN/CCO	IDB Country Office in Colombia
DNP	National Department of Planning
ESR	Environmental and Social Review
FAZNI	The Electrification of Non Interconnected Zones
GOC	Government of Colombia
IDB	Inter-American Development Bank
INE/ENE	Energy Division of the Infrastructure and Environment Department
IPSE	Institute for the Promotion of Energy Solutions to the Non-Interconnected Zones
JCF	Japanese Trust Fund for Consultancy Services
MW	Megawatts
MME	Ministry of Mines and Energy
SIN	National Electricity Grid
TC	Technical Cooperation
TOR	Terms of Reference

STRENGTHENING OF THE PROVISION OF ELECTRICITY SERVICE IN NON-INTERCONNECTED AREAS (ZNIs) IN COLOMBIA
PLAN OF OPERATIONS
(CO-T1071)

I. EXECUTIVE SUMMARY

Beneficiary Country:	Republic of Colombia
Team Leader/Members	José Ramón Gómez (INE/ENE) Team Leader; Alberto Levy (INE/ENE); Daniel Torres (CAN/CCO); Maria Jose Baptista (LEG/SGO); and Camilo López (INE/ENE).
Executing agency:	Inter-American Development Bank (INE/ENE).
Target Beneficiaries:	Low-income, rural populations in the Pacific Region, including the Departments of Chocó, Valle del Cauca, Cauca y Nariño.
Financing:	IDB (JCF): US$ 960,000 Local: US$ 240,000 Total: US$ 1,200,000
Objectives:	The TC objectives are to: (i) prepare an inventory and technical designs of energy projects in the Colombian Pacific Region which will, at the technical, economical and financial level, fulfill the objectives of the GoC on expanding the number of users in the ZNI established in the ZNI; (ii) advance the studies to solve efficiently the supply of energy at the design phase, potentially including wind, waste-to-energy, and thermal generation in the Islands of San Andres and Providencia that will support the development of the strategy to bid the concession to supply energy to the Island in 2010; and (iii) support to design the instruments of the concession of the remaining ZNIs areas to be transferred to the private sector and related regulations.
Execution timetable:	Execution: 12 months Disbursement: 18 months
Special contractual conditions:	None
Exceptions to Bank Policies and Procedures:	None
Environmental and social review:	The ESR Secretariat reviewed the TC profile on September 21, 2007. The proposed environmental and social strategy was approved.
Coordination with Other Donors:	Not applicable

II. BACKGROUND AND JUSTIFICATION

2.1 Non-interconnected zones (Zonas no Interconectadas – ZNI), or service areas not connected to the national electricity grid (Sistema Interconectado Nacional - SIN), are located in the areas with the lowest indices of human development in Colombia. ZNIs have low quality or non-existent electricity services. The improvement in its quality and its reliability, measured as the number of hours the service is available would enhance the quality of life in these areas, having positive impact in the goals of the Government of Colombia (GoC). Among these are the creation of opportunities for new productive activities, reduction of incentives to move to urban areas, improvement in conditions to attract displaced populations due to security concerns and reinforcement of security in areas formerly lawlessness, as well as the reduction of the cost of service provision and subsidies transferred by the government.

2.2 In these areas, the service has generally been provided by local organizations with inadequate management, resulting in higher costs, dependency of public funds, and mishandling of fuel that produce low levels of service. In December 2006, GoC revealed a new strategy for the ZNIs. It mandates: (i) the increase in energy generation and distribution coverage; (ii) the grouping of these areas; (iii) transfer of the operation to private entities; and (iv) use of local fuels from conventional and non-conventional sources when economically possible (these include biomass, wind or solar) and the implementation of rational use of energy principles. In addition, it aims to minimize subsidies given to: (i) the consideration of the population income; (ii) strengthening monitoring capabilities; and (iii) provide a solution to the provision of service in the islands of San Andrés and Providencia, given the expiration of the current concession in 2010.

2.3 The strategy comes in light of the enormous needs facing non-interconnected areas. Two thirds of the geography of Colombia is not interconnected, and the coverage only reaches 34 percent of the population served with 1,500 generation units totaling 118-Megawatts (MW). This is a fraction of the installed capacity of the SIN of 13,000-MW. Fuel used in the ZNI in Colombia is 98 percent hydrocarbons-based, requiring complex logistics of transport. Biofuels are an alternative that is increasing in importance and complements conventional fuel, in particular in the northern and in the southern part of the country.

2.4 Monthly average demand per user in ZNI is relatively low, ranging from 360-Kilowatts per hour (kWh) to 1200-kWh per year. Consumers in the ZNIs are located in 1,200 small towns and villages, being served by 91 providers. Average service availability is less than 12 hours per day, heavily weighted by the Islands of San Andrés and Providencia that receive power 24 hours a day, with many localities being served only four hours per day. There are three alternatives to provide or improve the energy services in ZNIs: (i) expand service frontiers of current providers in SIN to non-connected customers; (ii) capture possible economies of scale economies in generation by connecting non-interconnected areas via transmission lines or; (iii) evaluate generation alternatives within ZNI.

In the three cases, improvements to distribution infrastructure or the substitution of generation plants[1] may be required.

2.5 Funding for projects in the ZNI are derived from transaction fees in the wholesale electricity market and allocated to a FAZNI fund (Fondo de Apoyo Financiero para la Energización de las Zonas no Interconectadas). Each year, an amount of US$30 million to US$35 million is collected but such amount is insufficient to substantially improve or maintain the energy services in ZNI. The Ministry of Mines and Energy (MME) concludes that additional funding is needed in the ZNI. A strategy to provide those funds consists of providing additional resources to the GoC and the repayment would come from the funds collected in the FAZNI.

2.6 Institutional Framework: The Instituto de Planificación de Soluciones Energéticas (IPSE), is responsible for the integral provision of energy and operation in the ZNIs in Colombia. IPSE provides integral energy solutions in agreement with the requirements of the communities, through the strengthening of participating mechanisms, decision and communitarian empowerment, support to energy generation, distribution and commercialization, improving the continuity and dependability of the benefits of the service. Also, IPSE executes the policies addressing the ZNIs, develops research, studies and analysis that allows the diagnosis of the power needs in the ZNI. It also coordinates with the MME the execution of the energy projects in ZNIs, elaborates plans, programs and projects of the power infrastructure for non interconnected zones with the MME and the territorial agencies, and supports the development of technical and economic characteristics of power solutions, technical and financial viability of investment projects; advises and provide technical support to community organizations in ZNIs.

2.7 The Bank's Country and Sector Strategies: The Bank's strategy in Colombia is to promote the dynamism of the economy, promote social development and assure the protection of the most vulnerable groups; and improve the country's governance and support the modernization of the state. Also, the country strategy aims to support institutional and technical strengthening, and project preparation. This Technical Cooperation (TC) broadly supports the pillars of the Country strategy. Its results are in the context of the goals of this strategy.

2.8 TC Strategy: The financing of this TC was formally accepted by the Government of Japan for funding with the Japanese Trust Fund for Consultancy Services (JCF) resources.

[1] Fiscal limitations facilitate ongoing subsidies, for example, a hydroelectric plant might have half the cost of a diesel plant but the subsidies to the fuel of the latter are spread over a ten-year period, creating less pressure on the GoC. In 2006, direct subsidies to the ZNI were about US$ 30 million; such costs do not include transportation costs of the fuel, costs of administration and supervision of the service and depreciation of plant and equipment.

2.9 This TC would achieve several objectives: (i) carry out technical studies and designs needed in the bidding process, that would support the GoC to select between projects with lower costs and those projects with lower fiscal pressure; (ii) pursue legal documents needed for opening the bidding process by creating the conditions to accelerate the provision of electricity in ZNI to people with lower indices of human development; (iii) promote economic growth and employment opportunities in these regions by providing required basic infrastructure and enhancing opportunities to the poor; (iv) promotes the return of displaced people to their regions of origin; (v) reduce transfers from the treasury; and (vi) increase opportunities to the private sector.

III. PROGRAM DESCRIPTION

A. Program goal and purpose

3.1 The TC objective is to contribute to the expansion of electricity service provision in the ZNI of the Pacific Region in Colombia, identify the alternatives for power supply to the Islands of San Andres and Providencia and support the decision making process for identifying the service areas of the ZNIs.

3.2 The TC will fund the preparation of studies that will: (i) prepare an inventory and designs of projects and technical studies for the ZNI in the Colombian Pacific Region in order to pursue the GoC policy of transferring to private operators the operation of ZNIs and fulfilling its objective of increasing the number of users in the ZNI, from the current 15.000 to 40.000 in 2010; (ii) design a strategy for the bidding of a concession of the energy service in San Andres and Providencia Islands, by advancing the studies to solve efficiently the supply of electricity to these islands to the design phase, potentially including wind, waste-to-energy, and thermal generation; and (iii) support the awarding of concessions of the ZNIs areas to the private sector.

B. Activities

1. Component I: Inventory of energy projects in the Pacific Region (US$826,000)

3.3 This component will develop an inventory and study alternatives of energy projects at the basic design level in the Colombian Pacific Region, aiming at expanding service coverage and/or improve quality of service. The consultants will prepare the technical specifications and designs for the selected projects and will make recommendations on the strategies to incorporate current and new users by: (i) expanding the networks from electricity distribution companies connected to the national grid; (ii) merging two or more contiguous non-interconnected areas to gain economies of scale; and (iii) improving and/or expanding existing grid within existing boundaries. The details of the activities of this component are described in the Terms of Reference (TOR) (Annex IV).

2. Component II: Project in San Andrés and Providencia (US$24,000)

3.4 This component will provide support to the development of the bidding process for new concessionaires. This component will include, an analysis of existing data and studies, analysis of the current electricity generation contracts for the Island, analysis of alternatives of energy supply, including the technical, economical, environmental and social analysis of the selected alternative, providing specific emphasis on renewable sources of energy. The performance of these activities will generate a proposal for a concession of energy generation and distribution in the Island for 2010. The details of the activities of this component are described in the TOR (Annex IV).

3. Component III: Design of Concession Areas for ZNIs by supporting the awarding of concessions to the private sector (US$24,000)

3.5 This component will support the awarding of the concessions of the ZNIs areas to the private sector, through the definition of frontiers and methodologies of each service area in Colombia. This component will: (i) prepare an analysis of concession areas through technical studies, such as the improvement of electricity assets inventory; and (ii) determine the requirements, capabilities and qualifications of potential bidders for each concession area, including the preparation of guiding of the bidding documents and process. The results of this component will provide technical, economical and financial information and will identify the most efficient alternatives to promote the concession system in the ZNIs. It will also identify the required criteria, including the technical, economical and financial elements, which are to be met by the operators interested in participating in this competitive process. The details of the activities of this component are described in the TOR (Annex IV).

4. Component IV: Supervision Activities (US$50,000)

3.6 This component is intended to offer an overall support and to monitor de definition and completion of each of the activities related to the execution of the components I, II and III of this TC. The supervision role will include guidance and support in the field as well as in the office, to the Bank, IPSE and the consulting firms/individuals hired in the preparation of the work while necessary.

IV. Cost and Financing

4.1 Cost and financing: The development this TC has an estimated total cost of US$1,2 MM, of which US$960,000 are to be financed by the Japanese Trust Fund for Consultancy Services (JCF) and US$240,000 comes from local counterpart funding. Table IV-I summarizes the TC's estimated costs. Annex II presents the detailed budget.

Table IV-I – Summary Cost (in US$)

Component	Cost	Financing		
		IDB	IPSE	Total Funding
	(US$)	(US$)		
Component I: Inventory of Projects on the Pacific Region	**826,000**	**826,000**	0	**826,000**
Component II: Design of Concession Areas	**24,000**	**24,000**	0	**24,000**
Component III: Pilot Project in San Andrés and Providencia	**24,000**	**24,000**	0	**24,000**
Component IV: Supervision Activities	**50,000**	**50,000**		**50,000**
General support and Logistics	**240,000**	0	**240,000**	**240,000**
Audits	**20,000**	**20,000**	0	**20,000**
Contingencies	**16,000**	**16,000**	0	**16,000**
TOTAL	**1,200,000**	**960,000**	**240,000**	**1,200,000**
		80%	20%	100%

V. EXECUTING AGENCY AND MECHANISM

5.1 Executing Agency: In accordance with the requirements of the JCF, the Bank will be the executing agency of this TC. The IPSE will provide technical support in coordination with MME. The National Department of Planning (DNP) will provide general guidance in order to fulfill the goals and objectives of the National Development Plan and the CONPES. The National Development Plan recently approved by GoC Congress assigns IPSE the following responsibilities: (i) structure and supervise projects in the ZNIs; (ii) administer energy information for the efficient provision and expansion of the service; (iii) utilize renewable energy when economically feasible; (iv) serve as counterpart in co-financing energy projects for the ZNIs; and (v) promote the development of the regulatory framework for the ZNIs.

5.2 Executing mechanism: The project will be executed under the coordination of the Energy Division of the Infrastructure and Environment Department (INE/ENE). The consulting services will be carried out by a consulting firm or association of firms, consisting of both Japanese and Colombian specialists, as required by the rules of the JCF. IPSE will participate in the technical selection committees and will be in charge of coordinating logistical support and facilitating access to information. As beneficiaries of this TC, IPSE and the MME will provide counterpart staff and will review the technical reports

5.3 Execution period and disbursement schedule: It is anticipated that the project will have an execution period of 12 months and a disbursement schedule of 18 months.

5.4 Procurement and program implementation readiness: The procurement of consulting services will be carried out in accordance with the Bank's policies (documents GN-2349-7 and GN-2350-7). The procurement plan is presented in Annex III.

VI. MONITORING AND EVALUATION

6.1 Monitoring: The work of the consulting firm and the individual consultants and its compliance with the Terms of Reference for this project will be monitored by INE/ENE in close coordination with IPSE.

6.2 Technical and basic responsibility: Technical and basic responsibility for the project rests with the Energy Division of the Bank (INE/ENE) and IPSE. The Bank's Country Office in Colombia (CAN/CCO) will provide additional support.

6.3 Progress and final reports: Intermediate and final reports of each study will be submitted to IPSE and the Bank. IPSE will distribute the reports to the MME. The MME will submit comments to IPSE within 2 weeks after receiving the reports. IPSE and the Bank will be responsible for approval of the final reports.

VII. PROGRAM BENEFITS AND RISKS

7.1 Benefits and beneficiaries: This TC will contribute to the expansion of the electricity service provision in the ZNI of the Pacific Region in Colombia, identify the alternatives for power supply to San Andres and Providencia Islands and support the awarding of concessions of the ZNI areas to the private sector.

7.2 Risks: There are no major issues identified for this project. IPSE has a good record of project execution, supervision and monitoring. The TC will allow a more accurate calculation of the investments required by the government and private providers and therefore will lower the uncertainty they face regarding the economics of the concessions, therefore lowering the asking price for the energy to be delivered to ZNI users. The selection of private operators will be carefully performed to assure sustainability of the concessions. No new laws or regulations are expected, but only some methodologies to be developed by the regulatory commission to set the tariffs in these areas. A tight coordination among public entities exists to assure both the sustainability of the service and accessible tariffs to consumers.

7.3 There are some risks associated with the performance and oversight of the implementing agency but these are fully mitigated since the agency has significant experience. It is strengthening its capacity to monitor performance by developing a National monitoring center that controls, remotely, multiple variables. This information will allow proper benchmarking of results from the studies with its own database. Another risk is posed by heightened needs of coordination and logistics with the consultants to perform required studies.

Personnel from IPSE, however, are highly qualified and would accompany consulting team during field visits.

VIII. ENVIRONMENTAL AND SOCIAL REVIEW

8.1 This TC will not have a direct environmental and social impact. The social impacts of this project will be positive taking into account it's objectives and scope. The methodologies to be developed for the inventories to be financed by this TC, will include an environmental and social analysis to address in the ZNI the need to comply with the environmental and social relevant National Legislation and the requirements of the Bank Environmental and Safeguard Compliance Policy (OP-703).

8.2 Based on the Bank Environmental and Safeguard Compliance Policy (OP-703), and taking into account the objectives, impacts and risks of this TC, this operation is a Category "C".

8.3 The ESR Secretariat reviewed the TC Profile on September 21, 2007 and the proposed environmental and social strategy was approved.

STRENGTHENING OF THE PROVISION OF ELECTRICITY SERVICE IN NON-INTERCONNECTED AREAS (ZNIs) IN COLOMBIA

(CO-T1071)
CERTIFICATION

I certify that this operation was approved for financing under the Japanese Trust Fund for Consultancy services Special Fund Poverty Reduction Program (JCF) through a memorandum dated August 31, 2007 and signed by Rintaro Tamaki, Director-General of the International Bureau, Ministry of Finance, Japan. Also, I certify that resources from the JCF are available for up to US$960,000 in order to finance the activities described and budgeted in this document. This certification reserves resources for the referenced project for a period of nine (10) months counted from the date of signature below. Were the project not approved by the IDB within that period, the reserve of resources will be cancelled; except if a new certification is obtained. The commitment and disbursement of these resources shall be made only by the Bank in US dollars. The same currency shall be used to stipulate the remuneration defined and payments to consultants, except that local consultants working in their own borrowing member country shall have their remuneration defined and paid in the currency of that country. No resources of the Fund shall be made available to cover amounts greater than the amount certified herein above for the implementation of this T/C Funds Profile. Amounts greater than the certified amount may arise from commitments on contracts denominated in a currency other than the Fund currency, resulting in currency exchange rate differences, for which the Fund is no at risk.

Goro Mutsuura, VPC/GCM — Date: NOV 20, 2007

Marguerite S. Berger, Chief
VPC/GCM — Date: 11/26/07

ANNEX I
CO-T1071 – Logical Framework

STRENGTHENING OF THE PROVISION OF ELECTRICITY SERVICE IN NON-INTERCONNECTED AREAS (ZNIs) IN COLOMBIA

Summary	Performance Indicators	Means of Verification	Assumptions
Goal Statement	**Goal/Impact Indicators**	**Means of Verification**	**Assumptions**
The Goal of this TC is to contribute to the expansion of the energy service provision in the ZNI of the Pacific Region in Colombia, identify the alternatives for power supply to San Andres Islas and define the areas of services in the ZNI in Colombia.	After the TC is completed (12 Months) the project will determine: 1) Inventory and design of energy requirements and projects in the Pacific Region in Colombia under the responsibility of IPSE. 2) A proposal to give in concession the energy generation contract in the Island of San Andres; 3) Identification of areas in the ZNIs for concession to private operations.	Final reports; Statistics of IPSE.	The goals of the Plan de Energización Nacional are maintained.
Components/Outputs	**Components/Outputs Indicators**	**Means of Verification**	**Assumptions**
1. Inventory of energy projects in the Pacific Region	After 12 months of initiating the program IPSE will account with the following products: An inventory of energy projects that includes 1. The number and type of project in the project area; 2. The amounts of investment required; 3. The recommendations for the strategies and alternatives for electricity provision in the Pacific Region; 4. Designs of the identified projects.	Quarterly reports on: 1. The progress in the development of the inventory; 2. The establishment of a baseline; 3. Identification of alternatives; 4. Recommendations on the methodologies for selecting projects.	The objectives of the Plan de Energización 2006 – 2010 are maintained.

2. Design of Concession Areas for ZNIs	After 6 months of initiating the program IPSE will account with the following products: 1. Identification of the most efficient alternatives to promote the concession system in the ZNIs; 2. Identification of service frontiers in the ZNI in Colombia; 3. Analysis of concession areas minimizing investment costs; 4. Determination of requirements, capabilities and qualifications of potential bidders for each concession area.	Preliminary and final report identifying the most efficient alternatives for energy provision in the ZNIs in Colombia.	The objectives of the Plan de Energización 2006 – 2010 are maintained.
3. Identification of Pilot Project in San Andrés and Providencia	After 6 months of initiating the program IPSE will account with the following products: 1. An analysis of existing data and studies, 2. Analysis of the current energy production contracts in the Island, 3. Analysis of alternatives of energy supply, including the technical, economical, environmental and social analysis of the selected alternative, 4. Recommendations for the energy provision in the Island after 2010.	Preliminary and final report including the recommendations of the consultant on the available and most sustainable energy generation alternatives for San Andres after 2010.	The objectives of the Plan de Energización 2006 – 2010 are maintained. The interest of the GoC to introduce renewable energies and non conventional sources of energy in San Andres continue.
4. Supervision	Successful implementation and completion of components 1, 2 and 3.	Quarterly, preliminary and final reports of the three components. Final supervision report. Statistics of IPSE.	Guidance and support to the consulting firms/individuals hired.

ANNEX II: DETAILED BUDGET PROGRAM

Component	Person/months	Unit Cost	Cost	Financing		Total Funding
		(US$)	(US$)	IDB (US$)	Local	
Component 1: Inventory of Projects			**826,000**	**826,000**	0	**826,000**
Direct Cost	16	32,000	512,000	512,000	0	0
Sub-total Trips & travel			204,000	204,000	0	0
Indirect Costs (1)			110,000	110,000	0	0
Component 2: Design of Concession Areas			**24,000**	**24,000**	0	**24,000**
Direct Cost	4	6,000	24,000	24,000	0	
Component 3: Pilot Project in San Andrés and Providencia			**24,000**	**24,000**	0	**24,000**
Direct Cost	4	6,000	24,000	24,000	0	0
Component 4: Supervision			**50,000**	**50,000**	0	**50,000**
General Support and Logistics			**240,000**		**240,000**	**240,000**
General logistical support			120,000			
Equipment			120,000			
Contingencies			**16,000**	**16,000**	0	**16,000**
Audits			**20,000**	**20,000**	0	**20,000**
TOTAL			**1,200,000**	**960,000**	**240,000**	**1,200,000**
				80%	20%	100%

(1) Overhead

Component	Months	Unit Cost	Cost	Financing		Total Funding
		(US$)	(US$)	IDB (US$)	Local	
Component 1: Inventory of Projects on the Pacific Region	16		**826,000**	**826,000**	0	**826,000**
Component 2: Design of Concession Areas	4		**24,000**	**24,000**	0	**24,000**
Component 3: Pilot Project in San Andrés and Providencia	4		**24,000**	**24,000**	0	**24,000**
Component 4: Supervision Activities			**50,000**	**50,000**	0	**50,000**
General logistical support			**240,000**	0	**240,000**	**240,000**
Contingencies			**16,000**	**16,000**	0	**16,000**
Audits			**20,000**	**20,000**	0	**20,000**
TOTAL			**1,200,000**	**960,000**	**240,000**	**1,200,000**
				80%	20%	100%

ANNEX III

CO-T1071: Project Procurement Plan

STRENGTHENING OF THE PROVISION OF ELECTRICITY SERVICE IN NON-INTERCONNECTED AREAS IN COLOMBIA

General information

Country: Colombia
Beneficiary Country: Republic of Colombia
Executing agency: Inter-American Development Bank (INE/ENE).
Project name: Strengthening of the provision of electricity service in non-interconnected areas in Colombia CO-T1071
Brief description of the project's objectives and components:
The TC objectives are to: (i) prepare an inventory and technical designs of energy projects in the Colombian Pacific Region which will, at the technical, economical and financial level, fulfill the objectives of the GoC on expanding the number of users in the ZNI established in the ZNI; (ii) advance the studies to solve efficiently the supply of energy at the design phase, potentially including wind, waste-to-energy, and thermal generation in the Islands of San Andres and Providencia that will support the development of the strategy to bid the concession to supply energy to the Island in 2010; and (iii) support to design the instruments of the concession of the remaining ZNIs areas to be transferred to the private sector and related regulations.

Estimated date of project approval by the Board of Executive Directors: December 14, 2007.
Estimated date of signature of the loan contract: February 2008.
Estimated date of the final disbursement: August 2009.

A. Introduction

Procurements for the proposed project will be carried out in accordance with the *Policies for the Selection and Contracting of Consultants Financed by the Inter-American Development Bank* (GN-2350-7), of August 2006, and with the provisions established in the loan contract and this procurement plan.

B. Procurement plan

The procurement plan for the Strengthening of the Provision of Electricity Service in Non-Interconnected Areas in Colombia covering 12 months of project execution has been agreed between the Bank and Government of Colombia. The plan, which is summarized in Appendix 1, indicates the procedure to be used for the procurement of services, and the method of selecting consultants, for each contract or group of contracts. It also indicates the estimated cost of each contract or group of contracts; and estimated dates for the

publication of specific procurement notices and completion of the contracts included in this project. The procurement plan will be updated annually or whenever necessary or as required by the Bank.

The procurement plan is available on the Bank's website: Information on project procurements

C. Project procurement

The procurements to be made for the proposed project are described in general below.

Works procurement: There are no works included in the procurement plan.

Goods procurement: There are no goods included in the procurement plan.

Procurement of consulting services: Consulting services for the project include: research, analysis and reporting of results.

The consulting firms to be hired for the project will be selected using the standard request for proposals (RFP) issued by the Bank. Individual consultants will be selected bearing in mind the provisions established in chapter V of the policy in document GN-2350-7.

Short lists of consultants for consulting services estimated to cost less than US$350,000 equivalent per contract, may consist entirely of national firms.

Operating expenses: There are no foreseeable operating expenses to be financed by the Bank.

Appendix 1

Procurement plan[1]

Country: Colombia
Beneficiary Country: Republic of Colombia
Executing agency: Inter-American Development Bank (INE/ENE)
Project name: Strengthening of the provision of electricity service in non-interconnected areas in Colombia CO-T1071
Brief description of the project's objectives and components:
The TC objectives are to: (i) prepare an inventory and technical designs of energy projects in the Colombian Pacific Region which will, at the technical, economical and financial level, fulfill the objectives of the GoC on expanding the number of users in the ZNI established in the ZNI; (ii) advance the studies to solve efficiently the supply of energy at the design phase, potentially including wind, waste-to-energy, and thermal generation in the Islands of San Andres and Providencia that will support the development of the strategy to bid the concession to supply energy to the Island in 2010; and (iii) support to design the instruments of the concession of the remaining ZNIs areas to be transferred to the private sector and related regulations.
Estimated date of project approval by the Board of Executive Directors: December 14, 2007.
Estimated date of signature of the loan contract: February 2008.
Estimated date of the final disbursement: February 2010.

Contract Description	Estimated Cost (US$)	Selection Method	Review (ex-ante or ex-post)	Source of Financing and percentage	Prequalification	Publication of Procurement Notices	Status (pending, in process, awarded, cancelled
Inventory of Projects	826,000	QCBS	ex-ante	IDB=100%	No	January 2008	Pending
Pilot Project in San Andrés and Providencia	24,000	IC	ex-ante	IDB=100%			Pending
Design of Concession Areas	24,000	IC	ex-ante	IDB=100%			Pending
Supervision	50,000	IC	ex-ante	IDB=100%			Pending
Audits	20,000	IC	ex-ante	IDB=100%			Pending

QCBS=Quality and Cost Based Selection, IC=Individual Consultant

[1] All project contracts should be included, even if not financed by the Bank, indicating the source of funding in each case.

ANNEX IV

COLOMBIA

STRENGTHENING OF THE PROVISION OF ELECTRICITY SERVICE IN NON-INTERCONNECTED AREAS IN COLOMBIA (CO-T1071)

TERMS OF REFERENCE

DEVELOPMENT OF ELECTRICITY PROJECTS INVENTORY IN THE NON-INTERCONNECTED COLOMBIAN PACIFIC REGION

I. BACKGROUND

1.1 Non-interconnected zones (ZNI for its Spanish acronym), or service areas not connected to the national electricity grid (SIN), are located in the areas with the lowest indices of human development in Colombia. ZNIs, in addition, have low quality or even inexistent electricity services. The improvement in its quality, measured as the number of hours the service is available and its reliability, would enhance the quality of life in these areas, having positive impact in multiple goals of the Government of Colombia (GoC). Among these we find the creation of opportunities for new productive activities, reduction of incentives to move to urban areas, improvement in conditions to attract displaced populations due to guerrilla warfare and reinforcement of security in areas formerly under illegal groups ruling, as well as the reduction of the cost of service provision and subsidies transferred by the government.

1.1 In these areas, the service has generally been provided by local organizations with poor management, resulting in higher than normal costs, excessive dependency of public funds, mishandling of fuel, political influence in the decision making process that produce low levels of satisfaction with the service.

1.2 In December 2006, GoC revealed a new strategy for the ZNIs. It mandates the increase in coverage, the grouping of these areas in an rational process and transfer the operation to private entities, using local fuels when economically possible. These include water, biomass, wind, or solar, as well as the rational use of energy. Also mandates a transparent quantification of subsidies and their minimization, the consideration of population income to set the tariffs, strengthening monitoring capabilities and a solution to the provision of service in the islands of San Andres and Providencia, given the expiration of the current concession in 2010.

1.3 The strategy comes in light of the enormous needs facing non-interconnected areas. Two thirds of the geography of Colombia is not interconnected, and the coverage only reaches 34% of the population served with 1.500 generation units adding 118 MW. This is minuscule, when compared to the installed capacity in the National Interconnected Grid that adds to 13.000 MW. 98% of the fuel used is hydrocarbons-based, requiring very complex logistics to transport the fuel. Sometimes, transporting the fuel is more expensive than the fuel itself. ZNIs have a very high potential to generate using local sources such as water, wind, or biomass. Biofuels is an alternative that is increasing in importance and might substitute conventional fuel, in particular in the northern and in the southern part of the country.

1.4 Demand per user is relatively low, ranging from 360 to 1200 kWh per year. This is the monthly average consumption range of a user in the national interconnected grid. Consumers in the ZNIs are located in 1.200 small towns and villages, being served by 91 providers. Average service availability is less than 12 hours, heavily weighted by the Islands of San Andrés and Providencia that receive power 24 hours a day, with many localities being served only four hours.

1.5 There are basically three alternatives to provide or improve the energy service in ZNIs: (i) expand service frontiers of current providers in the national grid to non-connected customers. The Ministry of Mines and Energy (MME) is calling current SIN providers to submit proposals. Financial resources for these projects would come from a dedicated fund, called FAER, that collects about US$30-40 MM per year; (ii) capture possible scale economies in generation by merging contiguous non-interconnected areas via transmission lines; (iii) evaluate generation alternatives within current frontiers, or expanding them to serve new customers. In the three cases, improvements to distribution infrastructure or the substitution of generation plants[1] might be required. The studies arising from (ii) and (iii) above, funded by the Technical Cooperation(TC) subject of this request would allow the Inter-American Development Bank to prepare a loan for the GoC. So far, conversations with the Ministry of Mines and Energy (MME) and The Instituto de Planificación de Soluciones Energéticas (IPSE), point to this direction.

1.6 Institutional Framework: IPSE is responsible for the structural provision and operation in the ZNI in Colombia. IPSE provide structural energy provision solutions in agreement with the requirements of the communities, through the strengthening of the participation mechanisms, decision and communitarian empowerment, including the support to energy generation, distribution and commercialization, improving the continuity and trustworthiness in the benefits of the service addressing programs of rational use of energy and energy efficiency.

II. CONSULTANCY OBJECTIVE

2.1 The objective of the consultancy is to contribute to the expansion of the energy service provision in the ZNI of the Pacific Region in Colombia by providing an inventory of

[1] Government incentives currently are at crossroads. On one hand, fiscal limitations promote spreading subsidies over time, even if they represent much larger disbursements from the Treasury, measured in net present value, compared to a concentrated disbursement at the beginning of the period. For example, a hydroelectric plant might have half the cost of a diesel plant but the subsidies to the fuel of the latter are spread over a ten year period, creating less pressure on the Treasury. In 2006, direct subsidies to the ZNI were about 30 MM US$ but do not include transportation costs of the fuel, costs of administration and supervision of the service, depreciation of plant and equipment, etc.

projects, identifying the most efficient and economical alternative potential for energy and identify energy solutions for this region in Colombia

2.2 The specific objectives for this TORs are the following:

a. Prepare an inventory of projects and designs to be used during the bidding process in the ZNI of the Pacific Region in Colombia;

b. Identify the most efficient and economical alternative for energy supply in the ZNI in the Pacific Region in Colombia;

c. Define the requirement on infrastructure in every selection in order to prepare the bidding process of the ZNI;

d. Identify the potential for energy provision solutions from convention and non conventional source of energy in the ZNI.

III. SPECIFICATIONS FOR THE CONSULTANCY SERVICES

3.1 **Type:** The consulting services will be carried out by a consulting firm or association of firms, consisting of both Japanese and Colombian specialists, as required by the rules of the JCF. The firms have to be at least 50% owned by Japanese nationals. This TC will encourage the formation of partnerships with Colombian consulting firms or Colombian research centers. The contract is a lump sum payment to be awarded on technical merit. Payments shall be made as established in chapter V of this TORs.

3.2 **Starting date and duration:** The main activities to be carried out under this TORs are expected to be completed in between April 2008 and April 2009. The consulting firm will submit a detailed work plan, with personal activities, as a first inception report.

3.3 **Place of work:** The work is mainly to be done in Colombia and the offices of the consultant, although not all of the consultants need to be present in Colombia at all times. Most of the information is required to be completed in fieldwork in the Pacific Region in Colombia. Additional work will be required to be performed at the IPSE, located in Bogotá.

3.4 **Qualifications of consultants:** All members of the team or consortium of firms should have a post graduate level degree (Masters or Ph.D.) with a minimum of 10 years of experience in the field and at least 5 years of internationally recognized professional experience in energy (rural and non interconnected systems proffered), renewable energy, energy efficiency and knowledge alternative sources of energy. Fluency in English and Spanish are recommended for team members. Familiarity with IDB documents and procedures are desirable. A suggested core team of eight (8) members is here suggested:

a. A project team leader with extensive experience in developing energy plans for urban and non-interconnected regions, renewable energy, energy efficiency as well as environmental, social and economic considerations in countries similar to Colombia. The team leader will have to have experience in project planning and

management. A background for this managing position includes energy and energy management and economics, rural development or related.

b. A renewable energy and energy efficiency specialist with experience to identify potential for renewable energy resources and determine the level of investment required, as well as strategic planning of renewable energy resources in rural areas and ZNI.

c. A specialist with experience analyzing government regulations, institutional framework, legislation, policies (social and economic) and taxes, in relation to energy, biofuels and carbon finance. Experience in Colombia will be preferable.

d. An electrical engineer with experience in designing of energy projects involving, integrated networks, isolated systems, rural and off the grid systems.

e. An engineer with experience in hydraulics, small hydroelectric projects, run of river hydropower developments and isolated and small energy generation solutions;

f. A professional in the field of information technology, with the ability to prepare a database with the results of this project, and provide an interphase with the current systems of IPSE.

g. An environmental and social management specialist with experience in infrastructure projects, principally energy generation, transmission and generation projects;

h. A geographic information systems (GIS) specialist.

3.5 If deemed necessary, and not exceeding the suggested budget for the consultancy, the consulting firm may propose additional staff as part of the team or may negotiate the option of combining the duties of one or more of the recommended positions.

IV. ACTIVITIES

A. Activities for the consulting team

4.1 **Activity 1 – Information gathering on existing infrastructure:** Under this activity the consultants will gather all existing information of the Pacific Region regarding energy generation, transmission and distribution. The scope and the specific geographical location in the region will be provided by IPSE, which have background information and the details on the current systems. The inventory will provide all necessary data for developing and integrated approach to energy provision on this poor and isolated area of the country. In this component the consultant will identify all existing regulatory, institutions, norms and laws governing the provision of energy in the area of influence of the program.

4.2 This activity will have to determine and assess the following issues:

a. Diagnostic of the present situation, based in existing information and interviews to key stakeholders. This activity will include identification of stakeholders, public and private programs/initiatives. The diagnostic should also include an analysis of the current infrastructure and energy provision systems;

b. Identify the regulatory framework available that governs energy provisions in this areas,. This includes Governmental plans and programs and existence of economical resources;

c. Identify major bottlenecks, barriers and opportunities for the development of energy project in this region;

d. Perform research in different public and private entities to generate an inventory of already defined projects in the focus areas. Determine how obsolete and-or incomplete the information is. In analysis sessions with IPSE, determine whether completing and/or updating information is needed. These projects will be either one of the following: (i) electricity generation projects using renewable energy; (ii) extension of SIN networks; or (iii) merger of two existing ZNIs with enough capacity to serve the total load of the merged areas under a particular service quality standard, to be set jointly with IPSE;

e. Design standard solutions for typical distribution customers in a non-interconnected area. This will include medium voltage and low voltage infrastructure. For this activity, use previous designs prepared and implemented in Colombia using FAZNI Funds;

f. In the field, adapt one of these standard solutions to the specific requirements of each designated location;

g. In the field, make a preliminary assessment if each solution determined in (d) above will generate economic efficiencies and produce a preliminary estimation of such efficiencies. If these efficiencies are considered appropriate by IPSE, proceed to produce basic designs for these supply options. The criteria to be used by IPSE to determine if efficiencies are appropriate will be determine previous to initiating field trips;

h. If efficiencies calculated in (g) above are not considered appropriate by IPSE, propose an alternative solution. If accepted, proceed to generate basic designs.

i. Define targets in terms of coverage, served population, expansion plans, financing, legal and institutional requirements users and groups of population;

j. Identify potential of energy generation, from convention and non-conventional sources of energy in the project area of influence.

4.3 **Activity 2 – Evaluation of current energy production, transmission and distribution systems:** This component will identify the current operation conditions generation, transmission and distribution systems in the program area. Major activities will concentrate on identifying the existing infrastructure for these services, the identification of ways of improving the efficiencies of the current infrastructure. Also, this component

will assess the technical, economical and institutional conditions of the existing systems and will propose alternatives for improvement of the existing ones and generate solutions where there is no electricity.

4.4 **Activity 3 – Technical and economical evaluation**: This component will identify the available alternatives for the provision of electricity, based on the most economically efficient and sustainable manner of producing, transporting, distributing and managing the energy services in the Pacific Region in Colombia. This component includes the analysis of the following strategies: (i) connecting the existing or upgraded systems to the National Interconnected System (NIS); (ii) fusion or combination of several non interconnected systems; (iii) upgrading the current energy systems; (iv) maintaining the current alternative of energy services; (v) and build new plants, using traditional energy generation and distribution technologies and non conventional sources of energy.

4.5 **Activity 4 – Infrastructure design for organizing the electricity systems**: Based on the results of the above activities, this component will generate the designs, to be incorporated into the bidding documents the distribution systems for the Pacific Region taking into account the most efficient alternatives of producing, transporting, distributing and managing energy services resulting from the analysis of alternatives of the Activity 3. The results of this component are expected to be the final designs of the energy systems in the area. The recommendations of this component will include the legal and institutional arrangements necessary to assure the sustainability of the systems designed under this component.

4.6 **Activity 5 – Environmental and social considerations**: This component aims at incorporating the environmental and social management variables within the scope of the energy provision solutions in the Pacific Region. The consultant should develop an environmental management plan for proposed and existing systems, which will incorporate recommendations to be included in the bidding documents, also guidelines and plans for environmental management in the generation, transmission and distribution systems and during the construction periods taking into account the impacts of these works and the area of influence of each identified and selected project. The recommendations and plans arising from this component will comply with National Laws and bank environmental and safeguard compliance policy (OP-703). Also, the consultant will identify vulnerable communities in the area of influence of the program in order to facilitate their access to the solution designed.

V. REPORTS AND PAYMENTS

5.1 The consulting firm shall prepare the following final reports in Spanish (including and executive summary in English):

5.2 **Inception report:** This report will be prepared 2 weeks after starting the consultancy. The report will include the methodology, plan of work and required meetings. This information will guide IPSE on how the support the coordination of meetings and how to proceed with the coordination of activities while traveling to San Andres.

5.3 **Intermediate reports:** Multiple intermediate reports will be required. The number and extension of each report will be defined in the plan of work and will include all basic designs. The chronogram for the presentation of each of these reports will also be included in the plan of work. Intermediate report will be required when:

a. Activity (a) is completed;

b. Solutions for each designated area are designed at the basic level for the distribution component;

c. Solutions for each designated area are designed at the basic level for the generation/merging/SIN network extension for each supply option agreed.

5.4 **Draft Final Report**: The consultant will deliver this report at week 36 of starting the consultancy. The report should include the results of all the activities performed during the consultancy and should address all the activities in the objectives of the TORs.

5.5 **Final Report:** This report will be delivered by the consultant within 12 months of starting the consultancy. The report should incorporate the comments from IPSE, MME, DNP, the Bank and any other institutions involved in the consultancy suggested by IPSE.

5.6

Report	Week
Inception report	W+2
Intermediate report	W+12
Comments from IPSE and DNP and MME.	W+16
Second Intermediate Report	W+24
Comments from IPSE and DNP and MME.	W+28
Draft Final Report	W+36
Comments from IPSE and DNP and MME.	W+40
Final Report	W+48

5.7 Payments for the consulting services will be specified in the Contract, using the concept of *lump sum*, and will be made as follows:

i. 30% at contract signature and approval of inception report.

ii. 20% upon presentation of the progress reports.

iii. 20% upon presentation of the progress reports.

iv. 30% upon presentation and approval by INE/ENE and IPSE of the Final Report.

VI. COORDINATION

6.1 The work of the consultant firm and its compliance with the Terms of Reference will be monitored by INE/ENE in close coordination with IPSE. IPSE will coordinate with the MME and the DNP all the technical aspects of this TORs.

ANNEX IV

COLOMBIA

STRENGTHENING OF THE PROVISION OF ELECTRICITY SERVICE IN NON-INTERCONNECTED AREAS IN COLOMBIA (CO-T1071)

TERMS OF REFERENCE

TERMS OF REFERENCE

DESIGN OF CONCESSION AREAS

I. BACKGROUND

1.1 Non-interconnected zones (ZNI for its Spanish acronym), or service areas not connected to the national electricity grid (SIN), are located in the areas with the lowest indices of human development in Colombia. ZNIs, in addition, have low quality or even inexistent electricity services. The improvement in its quality, measured as the number of hours the service is available and its reliability, would enhance the quality of life in these areas, having positive impact in multiple goals of the Government of Colombia (GoC). Among these we find the creation of opportunities for new productive activities, reduction of incentives to move to urban areas, improvement in conditions to attract displaced populations due to guerrilla warfare and reinforcement of security in areas formerly under illegal groups ruling, as well as the reduction of the cost of service provision and subsidies transferred by the government.

1.2 In these areas, the service has generally been provided by local organizations with poor management, resulting in higher than normal costs, excessive dependency of public funds, mishandling of fuel, political influence in the decision making process that produce low levels of satisfaction with the service.

1.3 In December 2006, GoC revealed a new strategy for the ZNIs. It mandates the increase in coverage, the grouping of these areas in an rational process and transfer the operation to private entities, using local fuels when economically possible. These include water, biomass, wind, or solar, as well as the rational use of energy.

1.4 The strategy comes in light of the enormous needs facing non-interconnected areas. Two thirds of the geography of Colombia is not interconnected, and the coverage only reaches 34% of the population served with 1.500 generation units adding 118 MW. This is minuscule, when compared to the installed capacity in the National Interconnected Grid that adds to 13.000 MW. 98% of the fuel used is hydrocarbons-based, requiring very complex logistics to transport the fuel. Sometimes, transporting the fuel is more expensive than the fuel itself. ZNIs have a very high potential to generate using local sources such as water, wind, or

biomass. Biofuels is an alternative that is increasing in importance and might substitute conventional fuel, in particular in the northern and in the southern part of the country.

1.5 Demand per user is relatively low, ranging from 360 to 1200 kWh per year. This is the monthly average consumption range of a user in the national interconnected grid. Consumers in the ZNIs are located in 1.200 small towns and villages, being served by 91 providers. Average service availability is less than 12 hours, heavily weighted by the Islands of San Andrés and Providencia that receive power 24 hours a day, with many localities being served only four hours.

1.6 Institutional Framework: IPSE is responsible for the structural provision and operation in the ZNI in Colombia. IPSE provide structural energy provision solutions in agreement with the requirements of the communities, through the strengthening of the participation mechanisms, decision and communitarian empowerment, including the support to energy generation, distribution and commercialization, improving the continuity and trustworthiness in the benefits of the service addressing programs of rational use of energy and energy efficiency.

II. CONSULTANCY OBJECTIVE

2.1 The TC objective is to contribute to the expansion of the energy service provision in the ZNI in Colombia. These activities will support the expansion of electricity service frontiers of current providers in the national grid to non-connected customers; capture possible economies of scale in generation by merging contiguous non-interconnected areas via transmission lines; and evaluate generation alternatives.

2.2 The specific objectives for this TORs are the following:

a. Prepare a methodology to be use in the definition of the boundaries for the provision of energy services in the Zonas No Interconectadas in Colombia (ZNIs);

b. Prepare an analysis of concession areas minimizing investment costs;

c. determine the requirements, capabilities and qualifications of potential bidders for each concession area;

d. Identify the most efficient alternatives to promote the concession system in the ZNIs;

e. Identify the required criteria, including the technical, economical and financial elements, to be met by the operators interested in participating in this competitive processes

III. SPECIFICATIONS FOR THE CONSULTANCY SERVICES

3.1 **Type**: The contract is a lump sum payment to be awarded on through a competitive process. The consulting services will be carried out by an individual consultant. Payments shall be made as established in chapter V of this TORs.

3.2 **Starting date and duration:** The main activities to be carried out under this TORs are expected to be completed between May and June 2008. The consultant will submit a detailed work plan, with personal activities, in form of an inception report.

3.3 **Place of work:** The work is mainly to be done in Colombia. The contact point will be the IPSE, the DNP and the MME, all three located in Bogotá.

3.4 **Qualifications of consultants:** The consultant should have experience in economics, business, combined with energy management. Also, knowledge operability of markets for non interconnected/isolated systems is required. The consultants should have at least a master degree (Ph.D. preferred) with a minimum of 15 years of experience in the field and at least 5 years of internationally recognized professional experience in energy (non interconnected/isolated systems preferred), renewable energy, energy efficiency, environmental management, clean development mechanisms and knowledge of alternative sources of energy. Fluency in Spanish is recommended and English is desirable. Familiarity with IDB documents and procedures is desirable.

IV. ACTIVITIES

A. Activities for the consultant

4.1 The consultant will perform the following activities:

a. Analyze the existing concession areas in the ZNIs;

b. Based on similar experiences in Colombia and the region, identify the requirements of the bidders to participate in the Colombian process;

c. Review the existing conditions of energy supply on the existing ZNI in which the country is divided;

d. Identify any incentives for management of energy generation, transmission and distribution in the ZNIs;

e. Review and analyze the existing studies for alternatives sources of energy applicable to the ZNIs;

f. Identify what are the risks and opportunities for the government of Colombia and any private contractor to provide energy services in the ZNIs;

g. ~~Identify the potential of incorporating Biodiesel in some concession areas in~~ which this fuel is available or has great potential to be available;

h. Review the potential for energy efficiency projects in the ZNIs including housing policies, etc;

i. Identify existing community organizations that are providing energy solutions in the ZNIs;

j. Review the technical, economical, legal and financing implications of concession these areas;

k. Identify the required criteria, including the technical, economical and financial elements, required to be met by the operators interested in participating in this competitive processes;

l. Identify the environmental and social requirements, based on National Legislation and the Bank Environmental and Safeguard Compliance Poly (OP-703). to be incorporated within the bidding documents to avoid environmental liabilities and risks on the concession structure;

m. Meet with different stakeholders involved in the decision making process for providing the energy generation contract in 2010. This activity include IPSE, CORELCA, DNP, MME, etc.

V. REPORTS AND PAYMENTS

5.1 The consultant shall prepare the following reports in Spanish (including and executive summary in English):

a. **Inception report:** This report will be prepared within 2 weeks after starting the consultancy. The report will include the methodology, plan of work and required meetings. This information will guide IPSE on how the support the coordination of meetings and how to proceed with the coordination of activities if travel is required.

b. **Draft Final Report**: The consultant will deliver this report within 7 weeks of starting the consultancy. The report should include the results of all the activities performed during the consultancy and should address all the activities in the objectives of the TORs.

c. **Final Report:** The consultant will deliver this report within 10 weeks of starting the consultancy. The report should incorporate the comments from

IPSE, MME, DNP, the Bank and any other institutions involved in the consultancy suggested by IPSE.

5.2

Report	Week
Inception report	W+2
Comments from IPSE and DNP and MME	W+4
Draft Final Report	W+7
Comments from IPSE and DNP and MME	W+9
Final Report	W+10
Comments from IPSE and DNP and MME	W+12

5.3 Payments for the consultant will be specified in the Contract, using the concept of *lump sum*, and will be made as follows:

i. 30% at contract signature and approval of inception report;

ii. 30% upon presentation of the draft final report;

iii. 40% upon presentation and approval of the Final Report.

VI. COORDINATION

6.1 The work of the individual consultant and its compliance with the Terms of Reference will be monitored by INE/ENE in close coordination with IPSE. IPSE will coordinate with the MME and the DNP all the technical aspects of this TORs.

ANNEX IV

STRENGTHENING OF THE PROVISION OF ELECTRICITY SERVICE IN NON-INTERCONNECTED AREAS IN COLOMBIA (CO-T1071)

TERMS OF REFERENCE

PILOT PROJECT IN SAN ANDRÉS AND PROVIDENCIA

I. BACKGROUND

1.1 Non-interconnected zones (ZNI for its Spanish acronym), or service areas not connected to the national electricity grid (SIN), are located in the areas with the lowest indices of human development in Colombia. The improvement in its quality, measured as the number of hours the service is available and its reliability, would enhance the quality of life in these areas, having positive impact in multiple goals of the Government of Colombia (GoC). Among these we find the creation of opportunities for new productive activities, reduction of incentives to move to urban areas, improvement in conditions to attract displaced populations due to guerrilla warfare and reinforcement of security in areas formerly under illegal groups ruling, as well as the reduction of the cost of service provision and subsidies transferred by the government.

1.2 In the case of San Andres, the electricity service is divided in two operators, the first generates electricity and the second manages the transmission distribution, and commercialization services. The electricity service is currently being provide for 24 hours, by a set of diesel plants which generates all the demand of the Islands, approximately 27MW, with an installed capacity of 52 MW. Energy generation is being provided under a PPA contract, which expires in 2010. The tariffs are set by the independent regulatory agency in the Country (Comisión de Regulación de Energía y Gas – CREG). Corelca S.A.E.S.P, a government company, is in charge of managing the contract and has to make the payments to the electricity providers. The islands of San Andres and Providencia are also a ZNI region of which the Instituto de Planificacion de Soluciones Energéticas (IPSE) has the mandate to assure the provision of electricity in a sustainable manner.

1.3 IPSE is responsible for the technical and financial design and supervision of electricity projects in the ZNIs, including San Andres in Colombia. IPSE provide structural power provision solutions in agreement with the requirements of the communities, through the strengthening of the participation mechanisms, decision and communitarian empowerment, including the support to electricity generation, distribution and commercialization, improving the continuity and trustworthiness in the benefits of the service addressing programs of rational use of energy and energy efficiency. Also, IPSE executes the policies addressing the ZNI, develop research, studies and analysis that allows to make a diagnosis of the power needs at the ZNI, coordinates with the MME the execution of the projects identified by the IPSE, elaborates with the MME and the territorial agencies, plans, programs and projects of the power infrastructure for the non interconnected zones and support the development of technical and economic characteristics of power solutions, technical and financial viability of investment projects;

development of agreements with the territorial agencies and advises and provide technical support to community organizations.

1.4 The GoC through IPSE is in the process of identifying sustainable alternatives of electricity generation for the Islands to be implemented after 2010 when the PPA contract expires. In order to identify these activities, the GoC have requested the support of the Bank to identify the alternatives for electricity generation, sources of energy, conventional and non conventional, institutional capacity requirements and organization of the market and recommendations for action. IPSE is coordinating this study in order to support the decision making process involving San Andres.

1.5 This TC would achieve several objectives: (i) strengthening the provision of electricity service in the islands of San Andres and Providencia; (ii) promotes the use of alternative energy sources; (iii) promotes economic growth and employment opportunities in these regions by providing required basic infrastructure, enhancing opportunities for the poor; (iv) reduces transfers from the treasury; and (vi) increases opportunities for the private sector.

II. CONSULTANCY OBJECTIVE

2.1 The TC objective is to contribute to the strengthening of the electricity service provision in the ZNI in Colombia, identify the alternatives for sustainable power supply to San Andres Islands.

2.2 The specific objectives for this TORs are the following:

a. Prepare a proposal, including recommendations of actions, in order to support the bidding process in 2010 of sustainable energy generation in the Island of San Andres;

b. Review all available data regarding energy management and alternatives sources of energy for the San Andres Islands;

c. Identify the most efficient and economical alternatives for electricity supply in San Andres with alternatives sources of energy;

d. Based on the alternatives identified below, select the most efficient and economical alternative in order to design generation electricity projects. The design should consider technical and financial elements of the projects.

III. SPECIFICATIONS FOR THE CONSULTANCY SERVICES

3.1 **Type:** The consulting services will be carried out by an individual consultant. The contract is a lump sum payment to be awarded on through a competitive process. Payments shall be made as established in chapter V of this TORs.

3.2 **Starting date and duration:** The main activities to be carried out under this TORs are expected to be completed in between May and August 2008. The consultant will submit a detailed work plan, with personal activities, in form of an inception report.

3.3 **Place of work:** The work is mainly to be done in Colombia, mainly in San Andres Islas an Bogotá. The contact point will be the IPSE, the DNP and MME, all three located in Bogotá.

3.4 **Qualifications of consultants:** The consultant should have experience in energy management with concentration in energy generation, transmission and distribution. Also knowledge in market conditions for non interconnected/isolated systems is required. The consultants should have at least a master degree (Ph.D. preferred) with a minimum of 15 years of experience in the field and at least 5 years of internationally recognized professional experience in energy (non interconnected/isolated systems preferred), renewable energy, energy efficiency, environmental management, clean development mechanisms and knowledge of alternative sources of energy. Fluency in Spanish is recommended and English is desirable. Familiarity with IDB documents and procedures is desirable.

IV. ACTIVITIES

A. Activities for the consultant

4.1 The consultant will perform the following activities:

a. Analyze the existing data and studies for energy generation in San Andres;

b. Review the existing contract conditions of energy generation in San Andres;

c. Review and analyze the existing studies for alternatives sources of energy supply in the Island;

d. Identify several scenarios for energy consumption in San Andres for the next 20 years and the required supply in San Andres, taking into account conventional sources of energy and non conventional sources of energy;

e. Review the potential for energy efficiency project in the Island and identify interested institutions, technologies and current programs fro development such programs;

f. Review the technical, economical, legal and financing implication of the most viable alternatives identified above. The analysis will include tariffs, regulatory framework, legal and tax incentives, environmental and social implications and the possibility of applying the Clean Development mechanism;

g. Identify the institutions that should participate in the development of the identified alternatives to provide San Andres with a reliable and sustainable source of energy;

h. Identify risk and opportunities of introducing conventional and non conventional source of energy in the Island;

i. Identify the environmental and social requirements for developing the most efficient alternatives for energy generation in the Island, based on National Legislation and the Bank Environmental and Safeguard Compliance Poly (OP-703). The alternatives selected should incorporate the level of studies and permits, time for processing of the licenses and permits, which must be obtained and the institutions involved in the grating process;

j. Meet with different stakeholders involved in the decision making process for providing the energy generation contract in 2010. This activity include IPSE, CORELCA, DNP, MME, etc.

V. REPORTS AND PAYMENTS

5.1 The consultant shall prepare the following reports in Spanish (including and executive summary in English:

5.2 **Inception report:** This report will be prepared 2 weeks after starting the consultancy. The report will include the methodology, plan of work and required meetings. This information will guide IPSE on how the support the coordination of meetings and how to proceed with the coordination of activities while traveling to San Andres.

5.3 **Draft Final Report**: This report will be delivered by the consultant at week 7 of starting the consultancy. The report should include the results of all the activities performed during the consultancy and should address all the activities in the objectives of the TORs.

5.4 **Final Report**: This report will be delivered by the consultant at week 10 of starting the consultancy. The report should incorporate the comments from IPSE, MME, DNP, the Bank and any other institutions involved in the consultancy suggested by IPSE.

5.5 Schedule

Report	Week
Inception report	W+2
Comments from IPSE and DNP and MME	W+4
Draft Final Report	W+7
Comments from IPSE and DNP and MME	W+9
Final Report	W+10
Comments from IPSE and DNP and MME	W+12

5.6 Payments for the consultant will be specified in the Contract, using the concept of *lump sum*, and will be made as follows:

i. 30% at contract signature and approval of inception report.

ii. 30% upon presentation of the draft final report.

iii. 40% upon presentation and approval of the Final Report.

VI. COORDINATION

6.1 The work of the individual consultant and its compliance with the Terms of Reference will be monitored by INE/ENE in close coordination with IPSE. IPSE will coordinate with the MME and the DNP all the technical aspects of this TORs.