PD-ABH-243

UNCLASSIFIED

UNITED STATES INTERNATIONAL DEVELOPMENT COOPERATION AGENCY
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D. C. 20523

ROCAP

PROJECT PAPER

CENTRAL AMERICA RURAL ELECTRIFICATION
SUPPORT PROGRAM (CARES)

AID/LAC/P-848
CR-591

PROJECT NUMBER: 596-0146

UNCLASSIFIED

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT DATA SHEET

1. TRANSACTION CODE: [A] (A = Add, C = Change, D = Delete) Amendment Number: 1 — DOCUMENT CODE: 3

2. COUNTRY/ENTITY: Central America/ROCAP/USAID

3. PROJECT NUMBER: 596-0146

4. BUREAU/OFFICE: Latin America and the Caribbean [05]

5. PROJECT TITLE (maximum 40 characters): Central American Rural Electrification Support Program

6. PROJECT ASSISTANCE COMPLETION DATE (PACD): MM DD YY: 03 31 95

7. ESTIMATED DATE OF OBLIGATION (Under "B." below, enter 1, 2, 3, or 4): A. Initial FY [87] B. Quarter [3] C. Final FY [93]

8. COSTS ($000 OR EQUIVALENT $1 =)

A. FUNDING SOURCE	FIRST FY			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total	5,000		5,000	11,500		11,500
(Grant)	(5,000)	( )	(5,000)	(11,500)	( )	(11,500)
(Loan)	( )	( )	( )	( )	( )	( )
Other U.S. 1.						
Other U.S. 2.						
Host Country						
Other Donor(s)						
TOTALS	5,000		5,000	11,500		11,500

9. SCHEDULE OF AID FUNDING ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE 1. Grant	C. PRIMARY TECH. CODE 2. Loan	D. OBLIGATIONS TO DATE 1. Grant	D. OBLIGATIONS TO DATE 2. Loan	E. AMOUNT APPROVED THIS ACTION 1. Grant	E. AMOUNT APPROVED THIS ACTION 2. Loan	F. LIFE OF PROJECT 1. Grant	F. LIFE OF PROJECT 2. Loan
(1) PSEE	740			10,000		1,500		11,500	
(2)									
(3)									
(4)									
TOTALS				10,000		1,500		11,500	

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each): 240 820

11. SECONDARY PURPOSE CODE:

12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)

A. Code	DEL						
B. Amount							

13. PROJECT PURPOSE (maximum 480 characters)

To form a foundation for selecting appropriate policies and investments in the rural electric subsector of the region.

14. SCHEDULED EVALUATIONS: Interim MM YY: 04 90 — Final MM YY: 10 93

15. SOURCE/ORIGIN OF GOODS AND SERVICES: [X] 000 [ ] 941 [X] Local [ ] Other (Specify)

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a 1 page PP Amendment)

This amendment provides additional funding to the original U.S. Congressional Earmark to the National Rural Electric Cooperative Association (NRECA) to strengthen the institutional and technical bases for rural electrification throughout the Central American region. A $100,000 PASA with DOE/ORNL will also be signed. - I certify that the methods of payment and audit plans are in compliance with the payment verification policy.

Gary Bylesby
CONTROLLER

17. APPROVED BY — Signature: [signature] — Title: Lars Klassen, Acting Director — Date Signed MM DD YY: 05 17 93

18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION MM DD YY:

AID 1330-4 (8-79)

PROJECT AUTHORIZATION AMENDMENT No. 1

NAME OF COUNTRIES: Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama.

NAME OF PROJECT: Central America Rural Electrification Support Program (CARES)

NUMBER OF PROJECT: 596-0146

Pursuant to Section 106 of the Foreign Assistance Act of 1961, as amended, the Central America Rural Electrification Support Program (CARES) was authorized on August 7, 1990 at a life-of-project funding level of $5,000,000. However, the Project had at that time a previous obligation of $5,000,000 had been made previously through a Cooperative Agreement without an Authorization. The Authorization is hereby replaced in its entirety as follows:

1. Pursuant to Section 106 of the Foreign Assistance Act of 1961, as amended, I hereby authorize an amendment to the Central America Rural Electrification Support Program (CARES) for Central America (Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama; the "Cooperating Countries"), to raise total funding to eleven million five hundred thousand dollars ($11,500,000). This amendment adds planned obligations not to exceed one million five hundred thousand dollars (US $1,500,000) in Grant funds ("Grant") from the date of this authorization, subject to the availability of funds in accordance with the AID OYB allotment process, to help in financing foreign exchange and local currency costs for the Project. The amendment also includes a new component, Renewable Energy (RE), which consolidates and expands activities that had been initiated under the CARES project. These activities are especially directed to assist those isolated rural areas where the power grid cannot be extended. Its addition as a specific component reflects the importance and possibilities of these new technologies (e.g., photovoltaics and wind) in the energy sector. The planned life of the project is approximately 95 months from the date of initial obligation.

2. The Project consists of assistance to the power utilities in Central America, Panama and Belize and other organizations of the public and private sector involved in rural electrification to enhance the economic and financial attractiveness of rural electric investments by reducing investment costs, improving the organizational basis and operational efficiency of rural electric utilities while increasing economic benefits and financial revenues.

3. The amendment of the Cooperative Agreement, which may be negotiated and executed by the officer to whom such authority is delegated in accordance with AID regulations and delegations of authority, shall be subject to the following essential terms, together with such other terms and conditions as AID may deem appropriate.

a. Source and Origin of Commodities, Nationality of Services

Commodities and technical services financed by AID under the Cooperative Agreement shall have their source and origin in the United States (Country Code 000), except as AID may otherwise agree in writing or as provided in paragraph b. below. The suppliers of commodities or services shall have the United States as their place of nationality, except as AID may otherwise agree in writing or as provided in paragraph b. below. Ocean shipping financed by AID under the Project shall, except as AID may otherwise agree in writing, be financed only on flag vessels of the United States. Air transportation services financed under the Cooperative Agreement shall be on U.S. flag carriers except to the extent such carriers are not "available" as such term is defined by the U.S. Fly America Act.

b. Local Cost Financing

Local cost financing is authorized only to the extent permitted by the Agency's Buy America Policy as outlined in 90 State 41022 and in HB 1B, Chapter 18. If necessary, individual waivers may be processed for procurement of goods or services which are outside the exemption to the Buy America Policy, but necessary to project implementation, under the criteria stated in HB 1B, Chapter 5.

c. Waivers

A separate waiver for the provision of 25 percent counterpart contribution by NRECA as well as a Justification for a Non-Competitive Award were approved and are attached to the Authorization.

Lawrence Klassen
Acting Director

9.17.93
Date

Clearances:

PDSO, TDelaney	TRD	Date 9/10/93
RLA, MVelasquez	in draft	Date telcon. 9/10/93
OSPRIE, Tvollbrecht	AJ	Date 9/13/93
CONT, GByllesby		Date 9/14/93

JUSTIFICATION FOR NON-COMPETITIVE AWARD

A. Discussion: Since the 1960s AID efforts in rural electrification have been linked with those of AID's primary contractor in this field, NRECA (National Rural Electric Cooperative Association). A 1962 Basic Ordering Agreement between AID and NRECA provided a long-term mechanism through which AID could recruit NRECA specialists without going through a lengthy procurement process. This ease of recruitment, in addition to NRECA's substantial experience, made NRECA the contractor of choice in almost all AID-funded rural electrification projects.

In the particular case of Central America, the need for the integrated development of rural areas (a major concern for U.S. policy in the region during the last decade) prompted the U.S. Congress in FY 1987 to include funds in the Foreign Assistance Appropriations Act to carry out a comprehensive rural electrification program in order to establish the conditions and a foundation for economic development.

Pursuant to this policy, AID funded a preliminary study of the status and priorities for rural electrification in Central America that was completed in 1986 (Central America Rural Electrification Study, AID/NRECA). This study determined the financial, technical, and institutional basis for rural electrification in the region, and contained policy and country-specific recommendations. Under this set of recommendations, the Central American Rural Electrification Support Program CARES (596-0146) was launched. The objective of CARES is to form a foundation for selecting appropriate policies and investments in the rural electric subsector of the region.

A Cooperative Agreement was signed in May 1987 between NRECA and ROCAP/USAID to achieve this objective. An amendment is now being prepared as a result of an additional $1 million FY1993 earmark by the U.S. Congress for the CARES Program ($100,000 will be used to sign a PASA with DOE/Oak Ridge National Laboratory for the monitoring and evaluation of the Project) and a $500,000 Development Assistance Appropriation for Renewable Energy. This amendment will expand the level of effort under the original Cooperative Agreement and will extend the PACD through March 1995.

B. Justification: In accordance with AID Handbook 13, Chapter 2, 2B3c and 2B4, competition is not required for Grant awards when a proposal is an amendment to an existing assistance award. The proposed CARES amendment fully meets this requirement.

C. Authority: AID Handbook 13 Chapter 2, 2B4 specifies that a justification for non-competitive award of a grant must be submitted to the cognizant grant officer for review and approval.

D. Recommendation: That you approve an additional $1,400,000 Grant to NRECA which will bring total obligations under the Cooperative Agreement No. 506-0146-A-00-7022-00 to $11.4 million.

Approved: _____

Disapproved: _____

Date: 7/13/93

John McAvoy
Contracting Officer

AWARD2

A-76 DETERMINATION

JUSTIFICATION FOR THE USE OF A PASA

Section 621 (a) of the FAA authorized USAID to use a PASA with another USG Agency when it offers resources which are particularly suitable for the required technical assistance (i.e. be in a better position to provide the resources than USAID or the private sector) and such resources are available without unduly interfering with domestic programs.

The services and support to be secured under this PASA are for technical assistance related to the monitoring and evaluation of the final phase of the Central American Rural Electrification Support Program (CARES) in order to determine the effectiveness and timeliness of project activities in achieving stated objectives and goals.

The different components of the project and the complexity of rural electrification in the region made it essential to continue to obtain technical support from Oak Ridge National Laboratory (ORNL) in the monitoring and evaluation of the project. ORNL has been providing this type of support since the project's inception.

This assistance was provided to ROCAP through a buy-in under the umbrella of the Energy Policy Development and Conservation Project (EPDAC) of AID's Office of Energy and Infrastructure (S&T/EI) which signed a PASA with the Department of Energy (No. BST-5728-X-ER-5072-00 later superseded by PASA No. DHR-5728-P-ER-7008-00). This assistance, however, ended in December 1992 due to the termination of the EPDAC Project.

In view that the CARES Project is being extended until March 31, 1995, monitoring and evaluation activities need to be continued for the rest of the implementation period. The institution of choice continues to be ORNL due to its knowledge and involvement with the NRECA/CARES Program since the beginning of the project. In addition, ORNL has a long history of experience in rural electrification (RE) programs (and a cadre of highly-qualified professionals), RE project monitoring and evaluation, management, inter-governmental and inter-institutional coordination, scientific and research support, and the preparation of training and reporting materials.

For these reasons, it is determined that USDOE/ORNL has particular suitability to carry out the proposed PASA to provide the technical assistance required. The Mission also understands that ORNL has the capacity to provide the required assistance without unduly interfering with its domestic programs. Thus the requirements of Section 621 (a) of the FAA are met.

According to Section 621, the proposed PASA Agreement is justified because (1) it is for the provisions of technical assistance, and (2) the facilities and resources of the USDOE/ORNL are particularly suitable for the technical assistance to be provided, and the services are not competitive with private enterprise.

Lars Klassen 9.17.93
Lars Klassen
Acting Director

careval1

ACTION MEMORANDUM FOR THE ACTING DIRECTOR
WAIVER No. 596-93-021

FROM: PDSO, Thomas Delaney TRD

SUBJECT: COUNTERPART CONTRIBUTION WAIVER FOR THE CENTRAL AMERICAN RURAL ELECTRIFICATION SUPPORT PROGRAM CARES-596-0146)

DATE: September 13, 1993

ACTION REQUESTED

That you waive the requirement for the provision of counterpart contribution by NRECA under Amendment No. Two to the Central American Rural Electrification Support Program (596-0146).

FACTS

a.	Cooperating Countries:	Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama
b.	Project:	Central American Rural Electrification Support Program No. 596-0146
c.	Authorizing Document:	PIO/T No. 596-0146-3-30058 Coop. Agreement No. 596-0146-A-00-7022
d.	Implementing Agency:	National Rural Electric Cooperative Association (NRECA)
e.	Estimated Waiver Value:	$466,667

BACKGROUND

On May 5, 1987 the U.S. Agency for International Development signed a five year $5.0 million Cooperative Agreement with the National Rural Electric Cooperative Association (NRECA) as a result of a congressional earmark to strengthen the institutional and technical base for rural electrification throughout the Central American region. In August 1990, an addition of $5.0 million to the Project and Cooperative Agreement was authorized as a consequence of an additional earmark by the U.S. Congress for the CARES Program.

DISCUSSION

A Cooperative Agreement amendment in the amount of $1,400,000 made available under a FY 1993 $1,500,000 Congressional earmark is being processed. It will expand the level of effort under the original Cooperative Agreement, bringing total funding to $11.4 million and extend the Cooperative Agreement one year to March 31, 1995. A PASA for $100,000 with the Oak Ridge National Laboratories

9

to provide evaluation and monitoring services will also be negotiated.

During the preparation of Project Paper Amendment No. 1 in FY 1990 to obligate the additional Congressional earmark of $5 million, the concern arose regarding the possible requirement that, consistent with OPG (Operating Program Grant) procedures in Handbook 13, NRECA should provide twenty-five percent of the Project's total funding. Based on guidance from the General Counsel in AID/W (see UNCLASS State Cable 224708), the ROCAP Mission Director approved a waiver of the twenty-five percent NRECA contribution to the Amendment activities.

It is recommended that the twenty-five percent counterpart contribution requirement also be waived on this $1,400,000 Cooperative Agreement amendment based on the fact that NRECA is a cooperative (and registered PVO) which developed specific programs in response to FAA objectives but does not have a substantial independent income to support such programs, as well as on the fact that the funding for this amendment is also Congressionally directed.

AUTHORITY

Pursuant to Policy Determination 16, dated October 9, 1987, and Handbook 13, Chapter 4.B.e (copy attached) the Mission Director has the authority to waive the 25% counterpart contribution for independent organizations which develop or could develop specific programs in response to FAA objectives, but without substantial independent income to support such programs.

RECOMMENDATION

That you approve a waiver eliminating the requirement that NRECA provide a twenty-five percent counterpart contribution under the CARES Project Amendment.

Approved: Lawrence Klassen
Acting Director

Disapproved: _____
Lawrence Klassen
Acting Director

Date: 4.17.93

Attachments:

a. State 224708
b. Handbook 13, Chapter 4, paragraph 4.B.e.
c. AID Policy Determination 16 "Program Financing Arrangements with Independent Organizations"

Clearances:

OSPRIE:	AVollbrecht	AV	Date: 9/13/93
RCO:	JMcAvoy		Date: 9/13/93
RLA:	MVelazquez	(IN DRAFT)	Date: telcon. 9/10/93

NRECAWAI

UNITED STATES INTERNATIONAL DEVELOPMENT COOPERATION AGENCY

AGENCY FOR INTERNATIONAL DEVELOPMENT

CENTRAL AMERICAN RURAL ELECTRIFICATION SUPPORT PROGRAM CARES/NRECA

ROCAP/USAID

PROJECT PAPER AMENDMENT No. 1

Project Number: 596-0146

SEPTEMBER 1993

CENTRAL AMERICAN RURAL ELECTRIFICATION SUPPORT PROGRAM (CARES)

TABLE OF CONTENTS

VIII. ANNEXES

A. Implementation Schedule and Monitoring Plan
B. Initial Environmental Examination
C. Project Accomplishments to Date
D. Logical Framework
E. Detailed Amendment Budget by Component

LIST OF ACRONYMS

GENERAL

AID	U.S. Agency for International Development
AWEA	American Wind Energy Association
CARES	Central American Rural Electrification Support Program
CEAC	Electric Commission for Central America
CIDA	Canadian International Development Agency
COTR	Contracting Officer Technical Representative
DAM	Demand Assessment and Site Selection Methodology
DOE	Department of Energy
ECRE	Export Council for Renewable Energy
IBRD	International Bank for Reconstruction and Development-World Bank
IDB	Interamerican Development Bank
IFC	International Finance Corporation
IPD	International Programs Division (NRECA)
MEUs	Municipal Electric Utilities
NRECA	National Rural Electric Cooperative Association
PUE	Productive Uses of Electricity
RE	Rural Electrification
RETs	Renewable Energy Technologies
ROCAP	Regional Office for Central American Programs
TUCA	Central American Unified Electric Tariff
USAID	U.S. Agency for International Development

BELIZE

BEB	Belize Electricity Board
BREA	Belize Rural Electrification Association

COSTA RICA

CONELECTRICAS	Consortium of Electric Cooperatives
DSE	Directorate of the Energy Sector
GOCR	Government of Costa Rica
ICE	Costa Rican Institute of Electricity
MIRENEM	Ministry of Natural Resources, Energy, and Mines
SNE	National Electric Service

EL SALVADOR

CEL	Lempa River Hydroelectric Commission

GUATEMALA

EEGSA	Guatemala Electric Company
FUNDAP	Fundacion para el Desarrollo Integral de Programas Socioeconomicos
INDE	National Electrification Institute
MEM	Ministry of Energy and Mines

HONDURAS

AHDEJUMUR	Asociacion Hondurena para el Desarrollo de la Juventud y la Mujer Rural
IDH	Instituto de Desarrollo Hondureno
ENEE	National Electric Power Company
RECO	Roatan Electric Company

NICARAGUA

ACODEP	Asociacion de Consultores para el Desarrollo de la Pequena, Mediana y Microempresa
INE	Nicaraguan Energy Institute
ACE	Atlantic Coast Electrification Project

PANAMA

CONADE	National Energy Commission
IRHE	National Electric Institute

I. SUMMARY AMENDMENT RECOMMENDATIONS AND BUDGET

On May 5, 1987 the U.S. Agency for International Development signed a five year $5.0 million Cooperative Agreement with the National Rural Electric Cooperative Association (NRECA) as a result of a congressional earmark to strengthen the institutional and technical base for rural electrification throughout the Central American region. In August 1990, an amendment adding $5.0 million to the Project and Cooperative Agreement was prepared as a consequence of an additional earmark by the U.S. Congress for the Central American Rural Electrification Support Program (CARES).

The present amendment is an outcome of a supplementary $1.0 million earmark included under the FY1993 Foreign Assistance Appropriations Act for rural electrification development in the region. In addition, $500,000 are also being included from a Development Assistance Appropriation specifically designated for Renewable Energy. This funding will expand the level of effort under the original Cooperative Agreement bringing total funding to $11.4 million, and will provide funding until March 1995 extending the Project by one year. The balance from the first supplementary earmark mentioned above, ($100,000) will be used to fund a PASA with the U.S. Department of Energy/Oak Ridge National Laboratory DOE/ORNL to provide technical assistance to the Regional Office for Central American Programs (ROCAP), for the purpose of monitoring and evaluating the final phase of the CARES Project in order to determine the effectiveness and timeliness of project activities in achieving stated objectives and goals.

The original Project was designed to increase rural access to the benefits of existing and planned power sector investment in Central America (excluding Nicaragua), Belize, and Panama by making rural electrification programs technically, financially, and economically more efficient. It included four major components designed to work together to improve the poor living conditions of the region's rural majorities with inadequate access to basic public services, such as electricity. These components are:
1) Dialogue on Policy and Institutional Reform, 2) Enhancement of Operational Efficiency, 3) Least-Cost Rural Systems, and
4) Productive Uses of Electricity.

Two main Project components included in this amendment are part of those original components, namely: Dialogue on Policy and Institutional Reform, and Enhancement of Operational Efficiency. A new project component has been added, Renewable Energy for Rural Electrification (RE). This component has been part of the activities carried out by the Program since its inception and it has been basically targeted to those isolated rural areas where the electric grid has no chances of being extended. It has been included as a new major component because of the importance and high potential of these new technologies (e.g. photovoltaic and wind) in the energy sector arena for isolated uses and environmental purposes.

Activities associated with Least-Cost Rural Electric Design and Productive Uses of Electricity, both important components in the original project, will continue, but at a reduced level of effort.

Proposed activities under the amendment include policy and institutional reform to permit the decentralization and privatization of RE, allowing for greater efficiency; and, technical assistance and training, creating adequate organizations and technical and managerial capabilities.

Funds are also programmed to develop initiatives to alleviate energy shortfalls in the region and achieve greater efficiency of use through improved private sector oriented energy policy and planning. In this regard, special attention will be given to the creation of decentralized utilities.

On the supply side, the Project will continue to work on the modification of technical standards to permit cost savings in construction. On the consumer side, it will continue to offer a range of services to increase the rate of electrical connections and the productive use of electricity.

Even with a highly efficient private utility system in each country, many areas are too far from the grid to be electrified economically using conventional transmission line extension projects. However, many commercial renewable energy technologies can be economically attractive due to the region's exceptional wealth of natural resources. CARES, therefore, will foster the usage of renewable energy for RE through pilot project development, technical assistance, and training. It will also continue to work cooperatively with the U.S. industry (a world leader in this area) in order to develop a sustainable market in the region.

SUMMARY AMENDMENT BUDGET

(U.S. $)

COMPONENT		TOTAL
1.	Dialogue on Policy and Institutional Reform	325,000
2.	Enhancement of Operational Efficiency	261,000
3.	Renewable Resources of Energy for RE	500,000
4.	ROCAP's Regional Electric Power Sector Initiative	29,000
5.	Monitoring and Evaluation	49,000
6.	CARES Program Administrative Costs	236,000
7.	DOE/ORNL PASA	100,000
	TOTAL	$1,500,000

II. PROJECT BACKGROUND AND RATIONALE

A. Origins and Evolution of the Project

The need for the integrated development of rural areas has been a major concern of U.S. policy in Central America over the last two decades. In FY 1986-87, based on the bipartisan Jackson Report on Central America, the U.S. Congress included in the Foreign Assistance Appropriations Act funds to carry out a comprehensive rural electrification program in the region in order to establish the conditions and foundation for economic development in rural areas.

Pursuant to this policy, AID funded a study of the status and priorities for rural electrification in Central America that was completed in 1986 "Central America Rural Electrification Study, AID/NRECA." This study determined the financial, technical, and institutional basis for rural electrification in the region, and contained specific policy and country-specific recommendations. Based on these recommendations, the Central American Rural Electrification Support Project was launched, with the main objective of forming a foundation for selecting appropriate policies and investments in the rural electric subsector of the region.

B. The Problem

An essential problem of Central America is the poor living conditions of the rural population, characterized by substandard housing, low rates of literacy, high infant mortality, great incidence of disease, and a general isolation from basic public services available in urban areas. An important cause of this poor state of rural affairs is low income and consumption arising from the low rates of productivity of small rural, agricultural and industrial enterprises.

RE can contribute to solving such problems and has in fact accomplished much. However, major problems still remain; they include:

Institutional Issues: In most countries the power sector has for the last 30-40 years been organized into one or a few big enterprises, usually government owned, largely unregulated, and without competition. Therefore, RE has been over-centralized by governments, and not enough use has been made of the private sector to handle operational aspects, where it would have an advantage over the central power authorities. In general, there has been poor planning; high unit costs in procurement and construction; inefficient management; and very high commercial losses.

Institutional reform is required to make these organizations more effective in addressing the needs of the power sector (and RE in particular). In addition, training is essential to raise skills in administrative and technical areas.

Financial Issues: National power utilities have been facing substantial problems in meeting the financial requirements of present and future power supply investments. In good part this is due to the political approaches taken to tariff structure. Tariffs have been set below the level needed to cover operating costs, debt service, and required investments for the short and long-term. The financial management of the utilities which are implementing RE needs strengthening.

Technical Issues: Least-cost solutions for rural electrification have not been widely used. On the contrary, the subsector has many cases related to uneconomic extension of distribution systems; failure to coordinate investments in distribution which have not kept pace with investments in generation, contributing to high technical losses; lack of maintenance of plants, transformers, and other equipment, etc.

End-user Issues: Low numbers of subscribers and consumption rates contribute to high costs, which depresses the demand for electricity, deter the utilities from pursuing rural electrification which in turn keeps electrical connection and consumption rates low. One reason for this trend is that RE is being used to treat the symptoms of rural poverty, not the causes. In other words, it needs to be re-oriented to address the energy needs of a broader spectrum of end-users, particularly productive end-users.

C. Project Amendment Strategy

The Project components included in this amendment are designed to work together to counter the cycle mentioned above. A comprehensive approach is planned for a limited set of well-defined activities already identified and initiated by CARES in prior years. The most pressing need is for technical assistance to create adequate organizational, technical, and managerial capabilities associated with the ongoing institutional reform of the national utilities, which will permit the decentralization and privatization of rural electrification.

Activities concerning RE and the basic goals and objectives of the current CARES Project will focus on securing new policy framework successes in terms of rural electric organizations and the management of their supply and distribution. The Project will concentrate on developing promising initiatives begun under the existing CARES Project.

The proposed activities have the explicit support of USAID missions and host-country governments in the region. They are designed to provide for maximum leverage, i.e. host-country funding support, Mission local currency resources, other-donor capital financing, including that of PVOs, and contributions of the communities benefitting from electrification.

D. Relationship of Project to AID Strategy

In the International Development and Cooperation Act of 1979, the U.S. Congress stated that energy development and production are vital elements in the development process. Without sufficient energy, development lags. In consonance with this, energy development, has been a priority for AID for a number of years.

RE in particular is an important part of the AID energy thrust that includes activities in a number of other areas, such as energy analysis and planning, site testing, demonstration, evaluation and development of new energy technologies, and increasing energy supplies.

Two basic goals pursued by AID in the energy area are: 1) to ease the immediate energy constraints on development, and 2) to help countries make the difficult transition to a mix of energy sources that will sustain their economies in the future. This Project follows these considerations, and is also based on two important cornerstones of AID's energy policy: training and institution building; and technology transfer.

USAID and Other Donor Energy Assistance

There is significant donor support related to RE in Central America. The most effective donors are the International Development Bank (IDB) and the World Bank. In addition to AID bilateral programs there are other donors which include the Canadian International Development Agency (CIDA), and the Japanese, Italian, Spanish, Danish, Finnish, and German governments.

The IDB has provided considerable assistance for power development to the various utilities in the region. The IDB programs rural electrification financing for proper project selection, design and implementation. IDB and AID (in the context of ESF negotiations) have also been pressing for tariff increases as a condition for project lending and providing grants, in order to make power utilities more efficient.

The World Bank is currently the principal actor in El Salvador and a co-lender in Honduras (together with IDB). Through its lending, the Bank is stressing privatization, regulation, plant rehabilitation, reduction of transmission and distribution losses, technical assistance and training. Its loans are tied to policy and regulatory reform, and economic-financial improvements of the power utilities.

NRECA/CARES has established and will continue a positive working relationship with the multilateral banks.

USAID's Office of Energy and Infrastructure has co-funded an energy efficiency project with CARES, and has provided funding to the Export Council for Renewable Energy (ECRE), which in turn has assisted CARES. Buy-ins from the Department of Energy are also under discussion for projects relating to renewable energy development in Central America. Sandia National Laboratory has co-funded and will continue to co-fund renewable energy seminars and other renewable energy projects. The National Renewable Energy Laboratory is also likely to participate in renewable's development activities.

USAID Mission projects are also targets of opportunity to leverage investment capital to support new initiatives. Coordination by NRECA/CARES with AID's bilateral missions will continue under this amendment in an effort to achieve greater economies of scale.

III. PROJECT AMENDMENT DESCRIPTION

A. Goal and Purpose

This amendment will continue to focus on the achievement of the original project goal of ameliorating rural poverty in the region by increasing rural access to the benefits of existing and planned power sector investments. The Project will seek to enhance the economic and financial attractiveness of rural electric investments by reducing investment costs, improving the organizational basis and operational efficiency of rural electric utilities while expanding economic benefits and increasing financial revenues.

The purpose of the CARES Project is to form a foundation for selecting appropriate policies and investments in the rural electric subsector of the region. Such initiatives have become important in many other countries because they symbolize modernization and bring hope and opportunity to the rural poor.

B. Project Components

The amendment continues implementation of the original four major components included in the CARES Project, but reorganized to reflect progress made during CARES's first six years.

The existing CARES components are: 1) Policy Dialogue and Institutional Reform, 2) Enhancement of Operational Efficiency, 3) Least-cost Rural Electric System Design, and 4) Productive Uses of Electricity. In addition, CARES has reserved a line item for special regional projects support by USAID/ROCAP and a line item for project evaluation and monitoring.

As explained in more detail below, Components 3 and 4 will be integrated into Component 1. Renewable energy activities initiated under Component 3 will be regrouped into a new Component 3, called Renewable Energy for RE. Funds from the amendment will be used to continue the USAID line item for special projects and project monitoring activities. The following describes the components together with the proposed activities under this amendment.

Component 1. Dialogue on Policy and Institutional Reform

Support, through technical assistance and training, the adoption of policies and institutional reforms to strengthen the organizational and financial basis for rural electrification in Central America.

Amendment Activities Under this Component

Activity 1. Utility Decentralization Policy Support

In El Salvador, Guatemala, Honduras, and Nicaragua, the national power utilities have publicly committed themselves to the development of decentralized electric systems. In Panama, the GOP and IRHE are moving in the same direction. In Costa Rica, the regulatory agency (SNE) has been instrumental in promoting private power development. CARES has played and will continue to play a very active role in the promotion of autonomous, decentralized electrical systems. Such systems are much more efficient than the existing centralized national systems, and can develop RE at lower costs.

Costa Rica New legislation overhauling the national regulatory system and establishing in SNE a revamped, independent, and more open regulatory commission is expected to become law during 1993. NRECA has supported the process beginning with a general assessment made of SNE in 1991. Following this assessment NRECA provided direct assistance to the legislature in drafting the law during the legislative approval process.

Under this amendment, NRECA is planning to continue support to SNE in developing a general plan, with prioritization of critical needs for implementing the law, as well as follow-on consulting assistance in developing the "by-laws" and in training and institution building assistance.

With CARES "seed" funds, NRECA will seek to coordinate this effort with a broader implementation group, including the National Regulatory Research Institute in Ohio, one or more state regulatory commissions in the U.S., and USAID/CR (FINTRA) and the IDB's newly formed Multilateral Investment Fund which will provide funding support.

Guatemala INDE and EEGSA have substantially changed their policies relative to privatization, and are leading the region in the procurement of private power. INDE is supporting the development of autonomous municipal electric utilities and regional, private distribution companies. CARES will continue its dialog and support on decentralization activities especially in connection with possible distribution companies using only renewable energy technologies (See Component 3).

Honduras CARES was instrumental in the creation of a new private power utility on the Island of Roatan, the Roatan Electric Company (RECO). Many national government and utility policies were changed by the Project before RECO could be officially established. These policies provide a basis for the creation of private distribution utilities throughout Honduras. The Honduran Congress is presently formalizing an ENEE plan under which Honduras will be divided into four regions and each region will have a private electric distribution company. CARES will provide ENEE with technical assistance in establishing these new companies. (See Activity 4).

Nicaragua INE has taken the first steps toward decentralizing and privatizing its distribution system. CARES has begun the development of a private utility on the Island of Ometepe in Lake Nicaragua where over 30,000 people live. INE currently manages the power system of Ometepe which provides electricity only a few hours a day. Under the privatized system, the people of Ometepe will own and operate the power utility. (See Activity 5).

The long term objective is a sustainable and profitable power utility on Ometepe. Therefore, under this amendment CARES will provide support on the adoption of decentralization policies by the GON and INE. These policy changes will also support the development of more autonomous (possible private) power utilities on the Atlantic Coast.

Currently, NRECA is managing the Atlantic Coast Electrification Project (ACE) which is being funded by USAID/N. CARES has supported ACE with technical assistance and the procurement of one diesel generator. CARES will work with INE towards the goal of decentralizing this system.

Panama CARES has worked with IRHE on operational issues associated with interconnecting private power plants to the national grid. This technical assistance has provided a foundation within IRHE to accept the procurement of private power. Under the present amendment, CARES will continue to work with IRHE in fostering independent power development.

Activity 2. Municipal Electric Utility Assistance

The Project has been working extensively in the development of six independent municipal electric utilities (MEU's) in Guatemala. Activities include six complementary tasks: technical assistance on rehabilitation of hydro systems; synchronization, network mapping, and lineman training; management assistance on accounting, billing, and collection; strategic planning and the board of directors role; computerized systems; and the creation of utility exchange programs that sets up partnerships between MEUs of Guatemala and U.S. utilities.

Under the amendment, CARES will continue to work in the consolidation of these six tasks. The main objective will be for all MEUs to create a sustainable, autonomous electric company directed by an independent board of directors.

Activity 3. Choluteca Electric Utility Assistance

As a follow-up to the Roatan decentralization initiative, CARES and ENEE evaluated three areas on the mainland, La Ceiba, Danli and Choluteca. The latter was chosen as a possible site for a decentralized distribution system. CARES will now conduct a "Phase I" decentralization study that will enable ENEE to make a decision within a few months on whether they will support the development of a private distribution utility there.

If it is decided to go ahead with the project, potential sources of financing will be sought. Equity might be forthcoming from shrimp farm operators, sugar mill owners, cattle ranchers and/or other agro-industrialists. Financing from the International Finance Corporation (IFC) and other international financing sources will be sought to complement the investment package.

Once a critical mass of investors is reached, CARES will seek extensive community participation and involvement. Specific assistance activities will include: forming a corporation, valuing the system, carrying out negotiations for decentralizing the system, and helping operate and manage the electric utility.

It should be mentioned that the development of a private distribution company in Choluteca is likely to become a model for the development of private distribution companies throughout Honduras, because the Honduran Congress is in the process of modifying the existing Electricity Law to specifically allow ENEE to privatize its distribution system in the four principal regions of the country outside of Tegucigalpa.

Activity 4. Ometepe Electric Utility Assistance

CARES has concluded the policy dialogue and the Phase I studies that led to a decision by INE to support the development of a decentralized electric company in Ometepe and to the creation of an interim committee to form the "Ometepe Electric Company." Assistance in legalizing the company, negotiating with INE, preparing the company's "Prospectus", doing the financial engineering, and providing liaisons with the investors and community are all part of CARES' Phase II assistance package.

Thanks to its small size, the nature of the system and the cohesiveness of the community, it will be possible to support this initiative until it can stand on its own within current CARES planning horizons. Thus, training programs, construction standards, productive uses, and other activities which CARES has implemented throughout the region will be implemented in Ometepe.

Component 2. Enhancement of Operational Efficiency

Component Objective:

Raise and maintain adequate levels of technical and managerial skills through training programs and technical assistance aimed at reducing technical and administrative losses and operating costs of rural electrification.

Specific Activities Under This Component:

Under this component, support will continue on the following CARES on-going activities.

Activity 1. Operations and Administration Training and Technical Assistance

This activity will provide training and technical assistance in technical and administrative areas but will be restricted principally to interventions focussed on the creation of decentralized/private utilities. For example, training programs will be implemented in Ometepe and will be continued among the municipal electric utility companies in Guatemala.

With respect to training at the national utilities, emphasis will continue to be on creating region-wide programs based on widely used training programs in the U.S. The training program will focus on the training of trainers in an effort to institutionalize the training function in each of the beneficiary countries.

In addition, NRECA staff is expected to participate in conferences, seminars, and workshops that are deemed beneficial to the work undertaken to improve rural electrification in the region. Selected utility personnel, host-country governmental, and private sector representatives will also participate in some of these activities. Examples include the Latin American Rural Electrification Conference (CLER), and the NRECA Annual Meeting.

Activity 2. Energy Efficiency

Four initiatives will continue under this activity: a) investigating supply side losses, b) fostering rational use and conservation energy programs in regional utilities, c) encouraging productive uses of electricity, and d) developing and adopting a regional methodology for setting tariffs. Each of these activities have been a part of the CARES program during the last fiscal year. Funding from the amendment will be used to complete them.

Loss Reduction. With a buy-in from the USAID Office of Energy and Infrastructure, CARES participated in the evaluation of energy efficiency in Guatemala's power sector. From this evaluation emerged the clear need for a loss reduction program at INDE. The loss measurement program initiated by CARES under the evaluation, if implemented throughout the utility, would be a major step in the implementation of a general loss reduction program. CARES will work with INDE on the implementation of such a program.

For a number of reasons, CARES has not had the opportunity of working with IRHE (Panama) until this year. IRHE is struggling with the introduction of private power into its system. One clear problem is the wide deterioration of the distribution system, which has been built and repaired in recent years without standards and little information on the most cost effective techniques currently in use. During FY93 CARES slowly and carefully established a positive working relationship with IRHE and is now in a position to assist them on the definition and implementation of a loss reduction program. Using funds from the amendment, CARES will assist IRHE in the definition of the loss reduction program.

Productive Uses of Electricity Throughout the life of CARES, an important activity has been the promotion of productive uses of electricity, to raise the economic benefits of RE. In large measure CARES has succeeded in institutionalizing productive use promotion and credit programs throughout the region. However, it is clear that specific interventions such as the creation of a manual on demonstration and promotion and a regional workshop to consolidate this program is still needed.

TUCA In FY92, at the request of the Electric Commission for Central America (CEAC), CARES provided a consultant to help the electric utilities in the region develop a unified tariff structure (TUCA-Tarifa Unificada para Centro America). The idea was to depoliticize the setting of tariffs by using the same methodology for calculating tariffs throughout Central American. In the first phase of TUCA, several methodologies were considered and a decision was taken to test one methodology based on long-run marginal costs. The results of this work will be presented to the Presidents of the national utilities in late June or July 1993. Under this amendment, one of the objectives is to complete a unified methodology for setting electric tariffs. These tariffs are especially important, because they will be used to buy and sell electricity across the region's national frontiers.

Component 3. Renewable Energy for Rural Electrification

Component Objective:

To increase rural use of appropriate renewable energy technologies in order to help the people of Central America address their energy needs in an economically and environmentally sustainable manner.

Specific Activities Under This Component:

Under this component, CARES has identified four critical problems that impede the widespread development of renewable energy technologies (RETs): a) legal barriers, b) lack of sufficient financial resources, c) weak infrastructure to deliver information and technology to buyers, and d) insufficient market analysis. Nevertheless, the potential market in Central America is very large.

ECRE and the DOE have specifically targeted Central America to develop markets for RETs, and the World Bank has publicly committed itself to implement a financing mechanism specifically for renewable energy in Latin America.

CARES has closely coordinated its activities with ECRE, the World Bank, DOE and several of its laboratories (e.g. Sandia National Laboratory, National Renewable Energy Laboratory, and Pacific Northwest Laboratory). Because of its "on the ground" activities in Central America, CARES has played the role of a central coordinator for these agencies.

The funds available in the amendment are not sufficient to address the problems mentioned above. For this reason, CARES expects and will promote buy-ins in order to expand its program activities. Because of these funding limitations, the activities outlined below are narrow in scope, but address problems already identified by the CARES Program as important bottlenecks.

Activity 1. Information Dissemination

CARES has produced over the past 6 years dozens of brochures, manuals, and other types of information bulletins focussed on educating the public on various aspects of electricity. CARES has a "social communications" team that produces this information. Most of the available information on RET systems is inappropriate for the marketplace in Central America, and yet it is extremely important that potential buyers have a clear idea of what these systems can and can not do. Thus, as part of its activities CARES will focus on the dissemination of RET information. In this effort, CARES will use its connections with the U.S. manufacturers and distributors as a base for creating the information, and it will use its existing offices in Honduras, Costa Rica, El Salvador, Nicaragua, and Guatemala to disseminate the information.

An important component of information dissemination is data collection. It is virtually impossible to give realistic information of RET system performance without knowing the quality of the local natural resources.

For this reason, in FY93 CARES began a wind monitoring program in Guatemala in conjunction with U.S. Windpower; in El Salvador with the assistance of the American Wind Energy Association (AWEA); and in Nicaragua with the aid of INE. The data from this monitoring program will be modeled by the Wind Energy Modeling Team at the Pacific Northwest Laboratory, and will result in a detailed wind map for the region. Under this activity the data collection program will be continued and expanded to include other renewable resources.

Activity 2. Training

CARES has trained over a thousand lineman, managers, accountants, and persons associated with productive uses of electricity, standards, trainers, and so forth. Therefore, the Project has much experience upon which to build a RET training program. CARES began supporting this type of training in FY93 using both training experts from the U.S. and from the region.

Training will be carried out on system design, installation, operation, and maintenance. The type of training needed will depend on the type of installations. The focus will be on developing local maintenance and repair capabilities.

Special emphasis as been and will continue to be under this amendment on training trainers.

Activity 3. Pilot Projects

Possibly the most important task in the development of sustainable markets is the development of good pilot projects. in FY93, CARES has identified excellent potential pilot projects in Guatemala, Honduras, Costa Rica, and Nicaragua. Two of these pilot projects were undertaken in Guatemala with funding from EEGSA and the municipality of San Marcos. In this activity, CARES will assist in the design and implementation os solar photovoltaic pilot projects in additional municipalities in Guatemala, with two electric cooperatives in Costa Rica, and with Enersol in Honduras. Wind pilot projects will be implemented in Guatemala with private financing and possibly in El Salvador with public financing.

CARES has identified specific pilot projects in national parks and buffer zones around national parks, they are:

Pilot Project Design in National Parks: In Guatemala, Honduras, and Costa Rica, national parks have been developed to preserve the biosphere and to attract tourism. These parks, by and large, are unelectrified or have small and noisy diesel generators. Many parks in the U.S. and elsewhere use photovoltaic and other renewable energy systems to provide lightning, communications, and to eliminate poles and wire which are environmentally unattractive.

This task will collect the necessary renewable resource, weather, and load data to design renewable systems in the major parks of Guatemala, Honduras, and Costa Rica.

Government invitations to works with park authorities in Guatemala and Costa Rica have already been received and initial site assessment works has been completed for the Tikal National Park in Guatemala. A preliminary survey of 16 national parks in Honduras has also been completed.

Under this particular task, feasibility design studies will be completed for 12 national parks. The studies will include system design, basic information on design considerations, cost estimates, and operation and maintenance criteria.

Pilot Project Equipment Procurement and Installation in National Parks:

Under this task the following milestones will be completed:

a. Prepare procurement documents for equipment bids.
b. Complete local training sessions on system design, installation, operation, and maintenance.
c. Assist with equipment procurement and delivery.
d. Oversee system installation.

Specifications will be written for procurement documents for at least one pilot project in each country. It is anticipated that designs for many of the parks will be very similar in structure so that the specifications written under this task will be useful for other park installations as well.

Pilot Project Evaluation in National Parks: Under this task, a monitoring and evaluation program will be set up to determine the success of the pilot projects and to help avoid unnecessary problems so that these experiences could be replicated in other appropriate areas. Since these pilot projects in the national parks will be seen by thousands of local people and tourists, special care will be given so that they work effectively. An evaluation report will be issued at the end of FY94.

Pilot Project in National Park Buffer Zone: The buffer zones surrounding the Tikal National Park in Guatemala and several other parks in Costa Rica and Honduras have been created in an attempt to provide a sustainable habitat for the local population and the ecosystem. Under this task, a study will be done on electrification of a buffer zone around a national park, most likely Tikal or the Corcovado National Park in Costa Rica, where a small pilot photovoltaic project is already underway with technical assistance from NRECA/CARES.

The first step in the study will be to set criteria for choosing a buffer zone and design an implementation strategy that goes beyond the pilot project stage. It will include a demand analysis, socio-cultural survey, preliminary project design, cost estimates, and a proposed financing plan. An interesting and possible outcome of this task is the bundling of a large renewables project for funding from the Global Environmental Facility.

Component 4. USAID/ROCAP Electric Power Sector Initiatives

Regular blackouts in El Salvador, Guatemala, Nicaragua and Panama highlight Central America's very difficult situation in the electric power subsector. With poor economic growth during the last decade and growing debt service burdens, the countries lack the financial resources needed to fund the required investments to produce much needed electrical power for sustainable economic and social development. This situation is further complicated by problems such as high demand growth rates; inefficient institutions, management, and planning, uneconomic tariff structures; inefficient production, deliver, and use of electricity; and indigenous fuel limitations.

USAID/ROCAP in cooperation with NRECA and the USAID/Washington Office of Infrastructure and Energy, has been involved in different programs of support for rational energy policy which includes privatization, economic tariff structures, energy efficiency and conservation, technical assistance, and training. Under this amendment efforts will continue to support these and other specific assistance deemed necessary by USAID/ROCAP management in the support of the electric subsector of Central America.

Component 5. Monitoring and Evaluation

This component will provide technical assistance to USAID/ROCAP, for the purpose of monitoring and evaluating the final phase of the CARES Program in order to determine the effectiveness and timeliness of project activities in achieving stated project objectives and goals.

Component 6. CARES Program Administrative Costs

The amendment dully provides funding for administrative support costs related to the CARES Program.

Component 7. DOE/ORNL PASA

A PASA for $100,000 will be signed with DOE/ORNL to provide technical assistance to the Regional Office for Central American Programs (ROCAP) of USAID, for the purpose of monitoring and evaluating the final phase of the CARES Project in order to determine the effectiveness of project activities in achieving stated objectives and goals.

IV. PROJECT OUTPUTS BY COMPONENT

Component 1. Dialogue on Policy and Institutional Reform

End of project status

A formal commitment from four national electric utilities to the establishment and execution of decentralized operations is in place.

Explicit strategies for private participation are formulated in the electric subsector in three countries.

Explicit strategies for municipal participation in the electric subsector are formulated in one country.

At least one additional private electric utility is established in the region.

Laws are enacted or clarified to permit private generation, transmission, and/or distribution in two countries.

At least, one electric power regulatory agency is operational in the region.

Component 2. Enhancement of Operational Efficiency

End of project status

High-level managers in each national electric utility in the region have received CARES' training.

Trained trainers are in place to continue training when CARES program is completed.

Improvements on trainees' on-the job performance as a result of CARES training is in place.

Effective training programs fitted for regional conditions firmly established in two countries in the region.

At least one additional utility has autonomous capacity to calculate tariff rates.

Two additional non-government organizations managing credit programs for productive uses of electricity have autonomous capacity to present proposals to international funding agencies.

A plan for optimizing the transmission and distribution system and planning mechanism for procurement of private power is in place in Panama.

A losses evaluation study is completed in, at least, one country and a loss reduction program is implemented.

The utilities in the region have accepted a unified methodology for calculating tariffs.

Productive uses programs including demonstration, promotion, and credit are institutionalized in at least four countries in the region.

The DAM is institutionalized in at least three utilities in the region and has been used by all of the utilities in the region.

At least, one Demand-Side Management Program has been designed and implemented by a utility in the region.

Component 3. Renewable Energy for Rural Electrification

End of project status

Increased private sector investment in renewable energy projects in the region is achieved.

Information constraints are removed so market forces begin to meet rural people's energy demands through renewable energy technologies.

Data is collected and analyzed for at least one renewable energy source in three countries in the region.

A stock of renewable energy pilot projects with state, municipal, private, and non-governmental organizations are in place.

Increased public sector awareness and investment in renewable energy projects has been fostered in the region.

Introductory training programs on renewable energy technology applications for rural electrification is accomplished.

Pilot project with monitoring and evaluation completed in at least two national parks.

Project design completed for at least one buffer zone area.

A package of renewable energy projects valued at $ 10 million or more is presented to the IDB and World Bank for financing.

V. REVISED FINANCIAL PLAN

A. Summary Description

The proposed amendment will provide funding until March 1995. This includes a one year extension of the CARES Program which is being implemented under a Cooperative Agreement signed between NRECA and USAID (No. 596-0146-A-00-7022-00). It also provides $100,000 for evaluation and monitoring activities under a PASA with DOE/ORNL.

Following are the summary cost estimates for the Project.

SUMMARY COST ESTIMATES
($000)

PROJECT COMPONENTS	AID FUNDS
1. Dialogue on Policy and Institutional Reform	325.0
2. Enhancement of Operational Efficiency	261.0
3. Renewable Sources of Energy for RE	500.0
4. USAID's Energy Policy Planning and Efficiency	29.0
5. Monitoring and Evaluation	49.0
6. CARES Program Administrative Costs	236.0
7. DOE/ORNL PASA	100.0
TOTAL	1,500.0

B. Detailed Amendment Budget by Component

SUMMARY COST ESTIMATES
By Line Item Break-down
(in U.S. $)

PROJECT COMPONENTS	
1. Dialogue on Policy and Institutional Reform	
Salaries	$ 61.8
Fringe Benefits	21.0
Overhead	43.7
Travel & Transp.	78.0
Allowance	6.5
Other Direct Costs	114.0
Equipment and Supplies	0.0
Subtotal	325.0
2. Enhancement of Operational Efficiency	
Salaries	$ 84.0
Fringe Benefits	28.6
Overhead	59.5
Travel & Transp.	37.0
Allowance	8.4
Other Direct Costs	43.5
Equipment and Supplies	0.0
Subtotal	$261.0
3. Renewable Energy for Rural Electrification	
Salaries	$ 103.0
Fringe Benefits	35.0
Overhead	72.9
Travel & Transp.	28.9
Allowance	15.4
Other Direct Costs	242.3
Equipment & Supplies	2.5
Subtotal	$500.0
4. USAID/ROCAP Regional Electric Power Sector Initiative (Energy Planning and Efficiency)	
Salaries	$ 11.8
Fringe Benefits	4.0
Overhead	8.4
Travel & Transp.	4.3
Allowance	0.5
Other Direct Costs	0.0
Equipment and Supplies	0.0
Subtotal	$ 29.0

5. Monitoring and Evaluation

Salaries	$ 6.0
Fringe Benefits	2.0
Overhead	4.2
Travel & Transp.	9.2
Allowances	0.3
Other Direct costs	27.3
Equipment and Supplies	0.0
Subtotal	$ 49.0

6. CARES Program Administrative Costs

Salaries	$ 52.3
Fringe Benefits	17.8
Overhead	37.0
Travel & Transp.	7.5
Allowances	73.3
Other Direct Costs	48.1
Equipment and Supplies	0.0
Subtotal	$236.0

7. DOE/ORNL PASA $100.0

TOTAL	$1,500.0

C. Methods of Implementation and Financing

The $1,400,000 in AID funding will be obligated through a Cooperative Agreement with the National Rural Electric Cooperative Association (NRECA), and the Federal Reserve Letter of Credit (LOC) will be employed. Payments will be processed through AID Washington, FA/FM/CMP, which will then transfer the charges to the Mission through the advice of charge mechanism. A $100,000 PASA with the Department of Energy/Oak Ridge National Laboratory to provide evaluation and monitoring services will be signed. The Department of Energy will submit payment documentation to AID Washington, FA/FM/CMP. Charges to USAID/Guatemala will be made by AID/W following advise of charge procedures.

Allowable costs and contributions are on line with the Standard Provisions for U.S. Grantees and U.S. Subgrantees, which are:

The Grantee shall be reimbursed for costs incurred in carrying out the purpose of this grant which are determined by the Grant Officer to be reasonable, allocable, and allowable in accordance with the terms of (1) this grant, (2) any negotiated advance understanding on particular costs items, and (3) cost principles contained in OMB Circular A-122 entitled "Cost Principles and Non-profit Organizations" in effect on the date of this grant referred as "applicable cost principles."

D. Projections of Expenditures by Fiscal Year

The following table presents the projected Life of Project Expenditures of USAID financing by fiscal year, beginning in May 1987 and ending in March 1995.

PROJECTION OF EXPENDITURES BY FISCAL YEAR
USAID FINANCING
(in U.S. $000)

COMPONENT	FY87-92	FY1993	FY1994	FY1995	TOTAL
1. Inst. & Policy Reform	2,389.5	1,139.0	325.0	169.0	4,022.5
2. Enhancement of Op. Efficiency	972.5	216.0	261.0	102.0	1,551.5
3. Renewable Energy for RE			450.0	50.0	500.0
4. Least-Cost RE System Design	450.4	328.0			778.4
5. Prod. Uses of Electricity	359.9	289.0			648.9
6. ROCAP Power Initiatives	102.3	74.0	29.0	16.0	221.3
7. Monitoring and Evaluation	325.0	116.0	49.0	18.0	508.0
8. CARES Administration	2,185.9	463.0	236.0	284.5	3,169.4
9. DOE/ORNL PASA			85.0	15.0	100.0
9. TOTAL	6,785.5	2,625.0	1435.0	654.5	11.500.0

E. Financial Management and Reporting Requirements

Disbursement for activities funded under this amendment will be processed through AID Washington, FM/PAFD. However, as ultimate financial management responsibility rests with the USAID Mission and NRECA, NRECA will be required to submit annual work plans to ROCAP/USAID for approval prior to utilizing project funds. Quarterly accrued expenditure reports will also be required. The expenditure reports provided to USAID will serve as management tools, and will contain an appropriate level of detail to permit correct monitoring and evaluation of the Project.

Annual Work Plans

Annual work plans will be prepared by NRECA and five copies submitted to USAID no later than August 15 of each year. The Annual Work Plan is to provide a summary plan for proposed activities and expenditures during the calendar year. These work plans will provide the basis for approval of annual budgets. Budgets must be itemized by sub-component and the level of effort described.

The work plan should identify how the proposed activities relate to the activities completed during the previous period and how they relate to the overall purposes of the Cooperative Agreement. In particular, if the proposed work plan constitutes a major change in the existing overall program substance or priority focus, any such changes should be described and justified in detail.

USAID requires prior approval of work plans and budgets, and for any substantive modifications that may be proposed by NRECA during the course of a six-month period, for which USAID approvals have already been given. While USAID maintains the primary responsibility for project oversight, the bilateral Missions will participate in and guide activities and interventions being conducted in their host country. Therefore, USAID may require concurrence by the bilateral Mission and the host government of specific activities prior to approving work plans.

On a quarterly basis, NRECA will submit a proposed schedule for all travel and major events. Any short-term consultants and sub-contracts will be carried out in accordance with the "Procedures for the Selection of Consultants and/or Subcontractors for work with NRECA/CARES Program in Central America" as approved by the regional contracting officer on July 6, 1989.

When prior approval is needed, the AID Contracting Officer will respond to requests for approval on a timely basis and with sufficient lead time to permit NRECA to make all necessary preparations, recruitment, materials acquisition, etc. for scheduled activities.

Reports

It is required that the COTR will be kept fully informed of all planned activities, particularly those involving usage of contingency funds or requests for technical assistance. Other negotiations and/or usage of funds for related program activities from any other sources besides USAID must be reported to the COTR before any commitments are made.

Full and timely communication on these matters on a regular basis will facilitate program monitoring and approval.

NRECA will submit to the COTR at USAID, annual reports summarizing the accomplishments and problems of the Project. These reports will review and explain the development of Project activities over the prior fiscal year in relation to the Annual Work Plan. They will also identify any areas of particular success or implementation problems which need to be resolved, and describe the planned accomplishments for the coming year consistent with the approved work plan. Ten copies of the annual reports will be submitted no later than November 15 of each year.

In addition, NRECA will submit semi-annual status reports on project activities and accomplishments. The reports should be submitted no later than thirty days after the end of each half of the respective Fiscal Year (April 30 and October 30). They should include a description of project activities under each component and in each country, with a discussion of those activities in relation to the Annual Work Plan. They should also include a discussion of planned activities and a tentative schedule for the next semester.

These status reports should be accompanied by semestral accrued expenditure reports presenting a summary of total project expenditures to date, and broken down by project subcomponents consistent with the budgets included in the work plans. These reports will be management tools to monitor expenditures against planned activities and budgets, and as such will facilitate the preparation and approval of work plans and budgets.

Included also in the semestral status reports should be a list of all personnel whose services are paid with grant funds. The list should indicate whether the personnel are contracted professionals or support staff, long-term personnel, and the site of assignment.

F. Accounting, Audit, and Records

With respect to accounting, records, and audit, NRECA shall comply with the requirements set forth in HB 13, Appendix 4C, 2, Accounting, Audit, and Records and with OMB Circular A-133.

The AID Inspector General and the Controller General of the United States or their duly authorized representatives (paragraph 1I6 of Chapter 1 of Handbook 13) reserve the right to conduct an audit of the Grantee's books and records to determine whether the Grantee has expended AID's funds in accordance with the terms and conditions of this amendment. NRECA agrees to make available any further information requested by AID with respect to any questions arising as a result of the audit.

VI. IMPLEMENTATION PROCEDURES

The primary implementation document will be PP amendment No. 2 to the existing Cooperative Agreement signed between NRECA and USAID/ROCAP. However, control of the implementation process will be derived from the exchange of detailed annual work plans prepared by NRECA/CARES, and corresponding written approval of these work plans will be provided through Project Implementation Letters by USAID/ROCAP.

USAID Management and Monitoring

Project management responsibility will be with the USAID/ROCAP Mission located in Guatemala, and will be assisted, when needed, by other Mission's Offices. The Regional Energy Advisor will have day-to-day supervision over the implementation of this Project amendment.

USAID/ROCAP will be assisted in routine project monitoring by periodic reporting from NRECA and close collaboration with the CARES program management team. Semi-annual review meetings, and other meetings as necessary, will be held between USAID/ROCAP, NRECA/CARES and appropriate bilateral USAID personnel to assure proper coordination.

USAID will enter into a PASA with DOE/ORNL for evaluation/monitoring which will be directly managed by the USAID's Project Officer.

NRECA/CARES Management

Under the limits established by NRECA's IPD, the CARES Program is administer by a Program Manager (PM) located in Guatemala. This Manager has the responsibility to plan, develop and supervise projects, and activities related to the Program. In addition, he has to establish procedures, and administrative guidelines for the Program's personnel and implementation activities.

In order to keep USAID properly informed the PM has to prepare and present semi-annual status reports to the COTR (Contracting Officer Technical Representative) describing progress in the various components of the Program, problems encountered, and tasks and activities planned for the next quarter. He also has to present to USAID/ROCAP other reports as described in Section VII of this amendment.

VII. SUMMARY PROJECT ANALYSES

The original proposal submitted by NRECA for AID support "Study of Rural Electrification in Central America," March 1986, included detailed analyses in support of project activities. Since most of the proposed activities are an expansion of current activities, it has been determined that no additional analyses are required for this Amendment.

A. Economic Analysis

RE in developing countries is intended to serve both economic and social aims. It has been a cornerstone of rural development in several developing countries, as has been documented in AID's evaluation of projects in the Philippines, Bangladesh, and Costa Rica. The economic benefits have been documented in these type of evaluations. These benefits are all related to the uses to which electricity is put, and increase with the level and growth of demand.

These benefits are particularly important in relation to the manifestations of rural underdevelopment. Electricity can directly improve the quality of life through the provision of lighting and relieve some of the drudgery of household tasks. It provides refrigeration for rural health clinics and permits classes at night in rural schools. Electricity facilitates the development of rural communications and the integration of rural areas into national life. Finally, the provision of lighting in public places increases the sense of security and allows for the development of social activities in the community.

Broadly speaking, for productive uses, electricity is often a cheaper or more efficient form of energy for motive power, refrigeration and, for some purposes, heat, enabling farms, agro-industries, and commerce to increase profits by cutting costs and expanding output. For household uses, the economic benefits are the household's valuation of a superior quality of lighting and ironing, and of such products as refrigerators and television. The importance of village electrification as a means of encouraging people to live in the villages rather than the cities is another economic benefit. Thus, RE has a multi-dimensional role and many linkages.

The benefits associated with RE like the increase in crop yields and value-added through improved irrigation, processing, and storage, the expansion of off-farm employment opportunities are important elements to justify investments in electricity for Central America. Properly planned and executed, rural electrification can achieve significant results and help resolve many of the economic constraints to development in the region.

B. Institutional Analysis

AID efforts in rural electrification have been linked with its primary contractor in this field, NRECA. Since 1962 a Basic Ordering Agreement between these two institutions provided a long-term mechanism through which AID could recruit NRECA specialists without going through a lengthy open-bidding process. This ease of recruitment in addition to NRECA's substantial experience has made this institution the contractor of choice in almost all AID-funded rural electrification projects.

NRECA's International Program Division (IPD) has primarily responsibility for promotion of rural electrification and project implementation throughout the world. Its efforts take the form of direct and indirect contact with developing country officials, bilateral and multilateral agencies, and other institutions in other to develop the necessary framework for rural electrification support. As part of these efforts, NRECA helps countries identify bottlenecks, assesses programs and projects, proposes cost-effective solutions, and identifies possible funding sources. These sources vary from AID, DOE, the World Bank, and the Interamerican Development Bank. The organization is also highly qualified and effective in technical and consulting services for establishing and strengthening rural electric systems.

In order to make the CA RE Program more effective, NRECA has established a regional office in Guatemala from where it controls and monitors the different activities under implementation ensuring adequate and efficient operation of the Program.

This office keeps appropriate coordination with USAID missions of participating countries, host country institutions (e.g. Ministries of Energy, Power Utilities, Energy related NGOs, etc.), multi-national and bilateral funding agencies and institutions, and regional and local organizations.

Furthermore, the CARES Program has taken special care to deal with established institutions where it has been easy to train personnel, promote the service to rural users, and build administrative units capable of taking on many of the responsibilities of running a RE program in rural areas. Some of these institutions are listed below.

C. Major Counterparts

NRECA/CARES has established counterpart relationships with the better suited national and regional counterparts for specific project activities. The most important counterpart organizations are:

COUNTERPART ORGANIZATIONS

COUNTRY ORGANIZATION	NATIONAL ORGANIZATION	REGIONAL
Belize	Ministry of Energy and Communications Belize Electricity Board (BEB)	
Costa Rica	Ministry of Natural Resources Energy and Mines (MIRENEM) Energy Sector Directorate (DSE) National Electric Service (SNE) Costa Rican Inst. of Electricity (ICE) The Rural Electric Cooperatives Asociacion Costarricense para Organizaciones de Desarrollo (ACORDE) CEMPRODECA	Central American Institute for Business Admin. (INCAE)
El Salvador	Lempa River Hydroelectric Commission (CEL) The Distribution Companies	
Guatemala	Ministry of Energy and Mines (MEM) Guatemala Electric Company (EEGSA) National Electrification Inst. (INDE) Genesis Empresarial Fundacion para el Desarrollo Integral de Programas Socioeconomicos (FUNDAP)	
Honduras	National Electric Power Co. (ENEE) Asociacion Hondurena para el Desarrollo de la Juventud y Mujer Rural (AHDEJUMUR) Instituto de Desarrollo Hondureno (IDH)	Central American Bank for Economic Integration (CABEI)
Nicaragua	Nicaraguan Electricity Institute (INE) Asociacion de Consultores para el Desarrollo de la Pequena, Mediana y Microempresa (ACODEP)	Electric Commission for Central America (CEAC)
Panama	National Electric Institute (IRHE) National Energy Commission (CONADE)	

Annex "A"

IMPLEMENTATION SCHEDULE AND MONITORING PLAN

Component 1: Dialogue on Policy and Institutional Reform

1.1 Utility Decentralization Policy Support:

Assist ENEE in formalizing its decentralization plan to establish four distribution companies (throughout the year).

* Estimate load and tariff projections for at least one new distribution company. (first quarter)

* Draft pro-forma of financial projections for at least one new distribution company. (first quarter)

* Do a preliminary assessment of generation, transmission, and distribution conditions for at least one distribution company. (first quarter)

* Evaluate at least two utility management packages to be used by at least one of the new distribution companies. (first/second quarter)

* Assess preliminary training needs for one distribution company (second/third quarter)

Continue working on institutional and policy reform at INE by transferring CARES' experience with decentralized/private power initiatives in the region (throughout the year).

Assist IRHE to promote private power development (throughout the year).

Provide on-going support for the definition and implementation of SNE's general action plan and by-laws (throughout the year).

1.2 Municipal Electric Utility Assistance:

Continue CARES' technical assistance to six municipal utilities in Guatemala:

* rehabilitate one hydroelectric system (first-third quarter)

* map one electrical system (first quarter)

* synchronize two municipal generating systems to INDE's grid (second quarter)

* train twenty-four linemen (second/third quarter).

Continue CARES' administrative assistance to six municipal utilities in Guatemala, including:

* implementation of computerized billing and collection methods in two municipal utilities (second quarter)

* adoption of automated accounting methods in two municipal utilities (second quarter)

* improvement of financial planning methods in two municipal utilities (second quarter)

* establishment of partnerships between USA based municipal and MEUs in Guatemala (second semester)

Extend CARES' legal assistance to:

* write municipal by-laws in five utilities (second quarter)

* train 12 employees on legal matters in the six utilities (second quarter) and

* advise six utility managers on legal matters (throughout the year)

Assist municipal utilities in Guatemala in the formation of a MEU association (four quarter).

1.3 Choluteca Electric Utility Assistance:

Conduct a prefeasibility study (Phase I Report) of the Choluteca decentralization project (first quarter).

Develop a blueprint for Choluteca's electric company (second quarter).

* Draft charter for Choluteca's Electric Company

* Draft contract between ENEE and Choluteca's Electric Company

* Assess price tag and draft terms of transfer

* Proforma financial projections

* Draft a communications program including brochures, distribution of brochures, town meetings, training of customer relations staff, newsletter and/or other means deemed appropriate

Develop options for financial support for the creation of Choluteca's autonomous distribution company (second-third quarter).

1.4 Ometepe Electric Utility Assistance:

Initiate Ometepe's Phase II decentralization support, including:

* assistance in legalizing Ometepe's electric company (first quarter)

* preparing Ometepe's electric company's prospectus (first quarter)

* undertaking financial engineering analysis (first quarter) - drafting a communications program (first quarter)

Continue technical assistance in line staking, service upgrades, new services, capacitor analysis, lineman training, mapping, metering, work order procedures (throughout the year).

Continue management and financial assistance including Board of Directors training, accounting assistance, rate design, and promotion/consumer relation (throughout the year).

1.5 Conelectricas Assistance Program:

Assist CONELECTRICAS with the design and implementation of Demand-Side Management projects and associated engineering and procurement services (first quarter).

Component 2: Enhancement of Operational Efficiency

2.1 Operations and Administration Training and Technical Assistance:

Conduct a regional seminar focused on the application of new rural electrification distribution standards (first quarter).

Implement skill improvement courses for technical staff working in Ometepe and Choluteca's decentralized electric utilities (throughout the year).

Organize a regional workshop for the closing of CARES' support to our partner p.u. agencies and to establish the guidelines of intra-agency cooperation and follow up for the p.u. programs in the region (second quarter).

2.2 Energy Efficiency:

Assist IRHE's undertaking of a series of efficiency studies, including those of" a) technical and non-technical losses, b) load forecasting and management, c) demand-side management and conservation, d) distribution system planning and analysis, and e) general energy planning methodologies and modelling (throughout the year).

Complete assistance to IRHE to adopt a planning mechanism for incorporating private power into its system (third quarter).

Continue and update Guatemala's technical losses evaluation study (first quarter).

Discuss with INDE the final findings of the technical losses evaluation study (second quarter).

Assist NGO's managing productive uses of electricity (PUE) credit programs prepare at least two funding proposals to international private, bilateral, or multilateral donors (second quarter).

Compile policy and operational lessons projects from CARES' PUE credit projects and assemble these in a PUE credit guidelines manual (first/second quarter).

Support the completion of the regional methodology for calculating tariffs (TUCA) (first/second quarter).

Complete the Demand-Side Management project at CONELECTRICAS, including monitoring and evaluation and the preparation of a summary report (third quarter).

Prepare a final report on the institutionalization of DAM in the region (fourth quarter).

Component 3: Renewable Energy for Rural Electrification

3.1 Information Collection and Dissemination:

Develop, at least, four brochures illustrating potential applications of wind, photovoltaic, and hydro technologies for rural electrification in the region (one per quarter).

Collect and model wind data for El Salvador, Guatemala, Honduras, and Nicaragua (throughout the year).

Provide primary data to Northwest Pacific Laboratory for the generation of a wind map of Guatemala, Nicaragua and El Salvador (throughout the year).

3.2 Training:

Carry out at least four training activities on renewable energy technology applications for rural electrification in the region (one per quarter).

Complete local training sessions on system design, installation, operation, and maintenance for persons directly connected with the development, operation, and maintenance of the National Park Pilot Projects (second and third quarters)

3.3 Pilot Projects:

Appraise at least four photovoltaic pilot projects in the region, including municipalities in Guatemala, electric cooperatives in costa Rica and private suppliers in Honduras (one per quarter).

Continue technical assistance to on-going photovoltaic projects with Empresa Electrica de Guatemala and Empresa Electrica Municipal de San Marcos (throughout the year).

Launch at least one privately-financed wind pilot project in Guatemala.

Launch at least one privately-financed wind pilot project in El Salvador.

Identify at least one financial mechanism for developing wind-based generation projects in Guatemala and El Salvador (second quarter).

Complete pilot electrification project in Tikal National Park (third quarter).

Appraise photovoltaic systems for at least two other national parks in the region (fourth quarter).

Draft a demonstration/credit plan for residential uses of photovoltaic systems in Honduras (second/third quarter).

Implement two photovoltaic pilot projects with Coopeguanacaste and CoopeSantos in Costa Rica (third/fourth quarter).

Complete feasibility design studies in 12 national parks located in Costa Rica, Guatemala, and Honduras (first quarter)

Assist counterparts of the National Park Pilot Projects in Costa Rica, Guatemala, and Honduras with the development of bid documents for the procurement of equipment for pilot projects in each country (second and third quarters)

Assist counterparts in the National Park Pilot Projects with equipment installation (third and fourth quarters)

Identify indicators to measure the success of the National Parks Pilot Projects and set up a monitoring system to collect any necessary information and data (throughout the year)

Prepare an evaluation report of the National Park Pilot Projects (fourth quarter and beginning of next fiscal year)

Prepare a study of the electrification of at least one buffer zone area sufficient to identify socio-cultural issues, demand, preliminary project design, projects costs and a proposed financing plan (throughout the year)

ANNEX B

U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

: LAC-IEE-93-39

ENVIRONMENTAL THRESHOLD DECISION

Project Location	:	Central America Regional
Project Title	:	Central America Rural Electrification Support Program (CARES) Amendment No. 2
Project Number	:	596-0146
Funding	:	$ 11.5 million ($ 1.5 million, this amendment)
Life of Project	:	95 months
IEE Prepared by	:	Mario Funes, USAID/Guatemala Regional Energy Advisor

Recommended Threshold Decision: Negative Determination

Bureau Threshold Decision	:	Conditional Negative Determination
Comments	:	Activities currently identified for implementation under the amendment will not have a significant negative effect upon the environment if implemented properly. The negative determination is conditional, however, upon the Regional Environmental Advisor being consulted during project implementation to develop mitigations for potential environmental impacts and to help identify the need for any supplemental IEEs if required per 22 CFR 216 (e.g. development of hydroelectric facilities).

Wayne R. Nilsestuen Date 9/16/93
Wayne Nilsestuen
Acting Chief Environmental Officer
Bureau for Latin America
and the Caribbean

Copy to : Terrence Brown, Director
USAID/Guatemala

Copy to : Anthony Vollbrecht, Chief OSPRIE
USAID/Guatemala

Copy to : Mario Funes, USAID/Guatemala

Copy to : Wayne Williams, REA/CEN
USAID/Guatemala

Copy to : James Vandenbos, LAC/CEN

Copy to : John Walls, LAC/CAR&CEN

Copy to : IEE File

ANNEX "B"

INITIAL ENVIRONMENTAL EXAMINATION

I. Basic Project Data

Project Location:	Central America, Belize, and Panama
Project Title:	Central American Rural Electrification Support Program (CARES)
Project Number	596-0146, Amendment No. 2
LOP Funding:	$11,500,000
Life of Project:	9[illegible] months
Date:	June 1993
Action Recommended:	Negative Determination

II. Description of Project

The Project will continue to focus on addressing rural poverty in the region by increasing rural access to the benefits of existing and planned power sector investments in Central America. The strategy to accomplish this is to substantially improve the economic and financial attractiveness of rural electric investments by reducing investments costs, improving the organizational basis and operational efficiency of rural electric utilities and expanding economic benefits and financial revenues.

Project components are designed as a comprehensive approach to the major problems identified in the region's rural electrification subsector. Therefore, they include policy dialogue and institutional reform to permit the decentralization and privatization of RE which allows for a range of cost-efficiencies; technical assistance and training to create adequate organizations and technical and managerial capabilities; end-use efficiency and conservation as a way to achieve significant economic gains and better environmental quality. Related to these two last objectives is the inclusion of a new Project Component: Renewable Sources of Energy for RE. This component has been part of the activities implemented by CARES for most of its implementation life. It has been specifically directed to assist those isolated rural areas where the power grid cannot be extended.

In summary the project components are:

1. Dialogue on Policy and Institutional Reform
2. Enhancement of Operational Efficiency
3. Renewable Sources of Energy for RE
4. USAID/ROCAP Regional Electric Power Sector Initiatives
5. Monitoring and Evaluation
6. CARES Program Administrative Costs

III. Impact and Evaluation

The environmental impact of the on-going Project and the proposed Project Amendment will be minimal. The electrical infrastructure promoted and developed will be limited to subtransmission lines, networks and household installations. The networks and household installations are built along the streets or paths of existing communities and subtransmission lines recommended are primarily single pole lines; therefore, clearing of vegetation is minimal.

Permission from the appropriate government and/or private officials will be obtained before conducting any activities related to the development of hydroelectric resources. In the case of wood-pole technology activities, rationale silvicultural practices such as forestation will be followed.

It is important to mention, that the focus on energy efficiency, conservation, and renewables will have a positive effect on the environment.

IV. Environmental Determination

The proposed Project Amendment is not one which will have a significant environmental effect in and of itself. In view of the nature of the Project and of the evaluation outlines in part III of this IEE, a provisional negative threshold determination is recommended.

Terrence Brown
Acting ROCAP Director

9/2/93
Date

ENVIRON

Annex "C"

PROJECT ACCOMPLISHMENTS TO DATE

CARES Program

The project accomplishments listed below are those accomplishments since the start of Amendment 6 (May 1990). For accomplishments before that date, see Annex "c" of Amendment 6.

1. Dialogue on Policy and Institutional Reform

Component Results to date (Selected Major Achievements)

As a result of the Midterm CARES Project Evaluation by ORNL, activities under this component were narrowed to focus on the encouragement of private sector and decentralized rural electrification schemes. At the national level, CARES has worked with SNE in Costa Rica to form national policies that allow the implementation of the law allowing the development of private electric power; developed a model for privatization of the Honduran distribution system, which resulted in the passage of a new electric power law mandating privatization; developed a new electric utility system on the Atlantic Coast of Nicaragua as a model for improving the power sector; worked with INDE/EEGSA in Guatemala on decentralization mechanisms; and finally played a central role in the establishment of a new, regional methodology for buying and selling power across national frontiers.

Country accomplishments are given below.

Belize.

CARES established a national mechanism for rural electrification in Belize called the Belize Rural Electrification Association (BREA), but for political reasons BREA was never created. However, the national electric company, Belize Electricity Board (BEB), adopted much of the design of BREA to start a rural electrification unit within its organization.

El Salvador.

CARES was instrumental in the design of a new electric cooperative in Meanguera, and assisted in its implementation. The cooperative, the first in Central America since 1974, is now operational.

Costa Rica.

NRECA/CARES help established a Consortium of Electric Cooperatives (CONELECTRICAS) with an office and a full-time director. The purpose of this office was primarily to organize and finance a hydroelectric project, called the San Lorenzo project (15 MW). All of the necessary studies needed to finance the project have been completed and financing arrangements made. However, a long delay in the adoption of tariffs for private power producers delayed the financing of the project. The tariff has now been set at a rate that makes the project a good investment but not an excellent investment. CONELECTRICAS has several options for financing the projects, which are now being pursued. CONELECTRICAS has other important objective all of which relate to common needs of its members (e.g. training, demand side management projects, loss reduction projects, etc.)

The second project sponsored by CARES centered on the development of the capacity of SNE to regulate the power sector. CARES provided extensive training to principal staff of SNE involved in rate setting, interconnection policies, and other regulatory functions. SNE is the only power sector regulatory authority in Central America, and thus provides a local model for regulation to the governments of other Central American countries heading towards privatized electricity.

In addition, initial training was provided to decision-makers in installation foundations of photovoltaic systems through the installation of three systems near Puerto Jimenez, Costa Rica.

Guatemala.

CARES pioneered the use of its Demand Assessment and Site Selection Methodology (DAM) in Guatemala and El Salvador. DAM has allowed INDE to rank investments in its rural electrification program in a non-political manner. DAM has been the principal tool used to choose the villages electrified under the ongoing rural electrification program (PER III) financed by USAID/Guatemala and INDE. DAM is now in use in Guatemala, Honduras, El Salvador, and Nicaragua.

With the support of INDE, CARES investigated the possibility of establishing a private utility in Peten. CARES has developed a methodology for determining whether the probability of the success of a new private utility is highly like, possible, or not likely. After its investigation, a decision was taken not to pursue this project further. The importance of this project was not the final decision but the application of a methodology to make the decision. This "tool" has since been used to select privatization project in both Honduras and Nicaragua.

CARES has had a long standing and effective program to make the municipal utilities more efficient and autonomous. It began with intensive training programs at four municipalities: San Marcos, San Pedro, Guastatoya, and Retalhuleu, and has expanded to include Quetzaltenango and Huehuetenango. Under the program, computers were bought by the municipalities and CARES procured the software for the accounting and billing systems. All personnel-managers, administration, engineers, technicians - have received extensive training. In San Marcos, a mini-hydroelectric plant was rebuilt and synchronized with the grid.

Rural electrification pilot projects using solar electric systems were designed with the Municipality of San Marcos and EEGSA. Training was provided during the design and installation of the systems.

Wind measurement systems were installed throughout the windy regions of Guatemala and over six months of data analyzed.

Honduras.

With the full support of the people of Roatan, the Government of Honduras (GOH), and ENEE, CARES launched a new private electric utility on the island. Agreements were written and signed between the new Roatan Electric Company (RECO) on the transfer of ENEE's assets including a new 6 MW diesel power station and transmission line. RECO is a "broad-based" corporation in which every customer owns a minimum of one share. When it started operations, system loses were 25% and most service connections and meters were in poor condition. RECO replaced all meters, improved most service drops, doubled the number of customers, and decreased system loses to under 12%. The first Board of Directors has been elected and a formal inauguration of the system held. CARES will terminate its activities in Roatan this fiscal year, but NRECA will possibly continue its support through its volunteers program.

The Honduran Congress is in the final stages of passage of a new law which requires ENEE to privatize its distribution system in the four major regions of the country. Roatan provides one model for privatization, but in many respects it is culturally and economically very different than the Honduran mainland. Therefore, again with the support of ENEE and the GOH, CARES investigated privatization opportunities in Choluteca (Southern Region), Danli (Central Region), and La Ceiba (Northern Region), and chose Choluteca as the best region in which to continue its support. The first phase of the creation of a private utility is the writing of a business prospectus for potential investors. This prospectus must realistically weigh the benefits and risks of such an investment, which implies that most of the mechanisms for organizing the utility, transferring assets, and commencement of

operation have been clearly defined. In any case, the procedure set by CARES for privatizing the Southern Region of Honduras will set a precedent for the other regions.

Nicaragua.

CARES was instrumental in the design of the Atlantic Coast Electric project under which NRECA is currently rebuilding the electric utility system in Bluefields and Puerto Cabezas. These utilities are far from Managua and would operate more efficiently as private or at least as decentralized systems. ICE and the GON support the concept, but the first objective has been to get the power plants functioning well.

In the meantime, CARES proposed an investigation of other regions of the country similar to its investigations in Guatemala and Honduras. INE agreed to an investigation in Rivas and Ometepe. A low level of local interest in Rivas eliminated that project, while an enthusiastic response in Ometepe promoted further work there. CARES has since helped the islanders to organize a temporary Board of Directors, and is helping the Board develop a prospectus for investors.

In addition, wind measurement devices were installed on the Island of Ometepe and north of Rivas. Analysis of data taken is underway.

Panama.

Despite many pronouncements by the GOP in the privatization of the power sector and considerable support from USAID/Panama, little progress has been made. A major obstacle has been the lack of understanding of the privatization process among the management of IRHE, and their fear that privatization was tantamount to loss of jobs and the ultimate destruction of the utility.

CARES was asked to help overcome this obstacle by working with IRHE's Department of Planning on the problems faced in the interconnection of private power plants.

2. Enhancement of Operational Efficiency

Component Results to date (Selected Major Achievements)

Over the life of the CARES program, many training courses across all utility functions have been held with the national utilities throughout the region. Over 250 utility personnel have participated in these courses. More recently, CARES has moved away from training for national utilities, and has concentrated more on training to its decentralized projects such as Roatan or on regional training workshops such as its course on "Accounting for

Non-Accountants" given to 40 top level staff from throughout the region and its course on high efficiency transformers which was attended by utility representatives from every Central American utility and Panama. In general, CARES has funded training activities in management, accounting, loss reduction and in operations.

CARES has promoted the translation of existing and well-tested training courses used by cooperatives and utilities in the U.S., and has agreements with several major distributors of training programs to sue their materials and videos, for which NRECA has Spanish translations.

In addition, a new project on Demand Side Management based on the use of high efficiency light bulbs, the first of its type in the region, is currently underway.

3. Least Cost Electric Design

Component Results to date (Selected Major Achievements)

With the aid of CARES rural electric engineers, INDE designed and built a very low cost, earth-return electrification system in Panabajal, Guatemala.

CARES inspected the design and construction of all electrification projects under the first phase of PER III. These projects were built after the adoption and implementation of rural electric standards by INDE.

Rural electric standards and specifications have been adopted in Guatemala, El Salvador and Costa Rica, and are under consideration in Honduras. Standards have been established also for RECO and Guatemalan municipalities.

4. Productive Uses of Electricity

Component Results to date (Selected Major Achievements)

CARES has taken major steps toward institutionalizing productive uses programs including training, promotion and demonstration, and credit in Guatemala, El Salvador, Costa Rica and Honduras.

CARES has identified NGO's in each country in Central America with the interest and ability to manage a productive use program. These NGO's have been given extensive training.

Mobile demonstration units have been equipped and are in operation in Guatemala, El Salvador, Honduras, and Costa Rica.

Credit programs, managed by local NGO's, are funded and operating in Guatemala, Costa Rica, and Honduras. In El Salvador, the utility manages a credit program for productive uses. In most countries of Central America, the productive use programs are now self-standing. CARES is providing follow-up aid to reinforce first phase training programs and is assisting the NGO's with their search to find additional credit funds.

5. ROCAP Energy Policy Planning and Efficiency Initiative

The ROCAP Initiative has supported the power sector studies in El Salvador, Costa Rica and Guatemala; and helped to launch the first phase of a energy efficiency program with IRHE in Panama.

Funds have been provided to top level managers of the power sector throughout the region to participate in power sector seminars and conferences at the World Bank and elsewhere. Other training subjects include privatization, tariff design, and energy and the environment.

NRECA
CENTRAL AMERICAN RURAL ELECTRIFICATION SUPPORT PROGRAM
MONITORING PLAN: CARES AMENDMENT

Project Title: NRECA Central American Rural Electrification Program **Est. Project Completion Date: 1995** **Date of Summary: 7/7/1993**

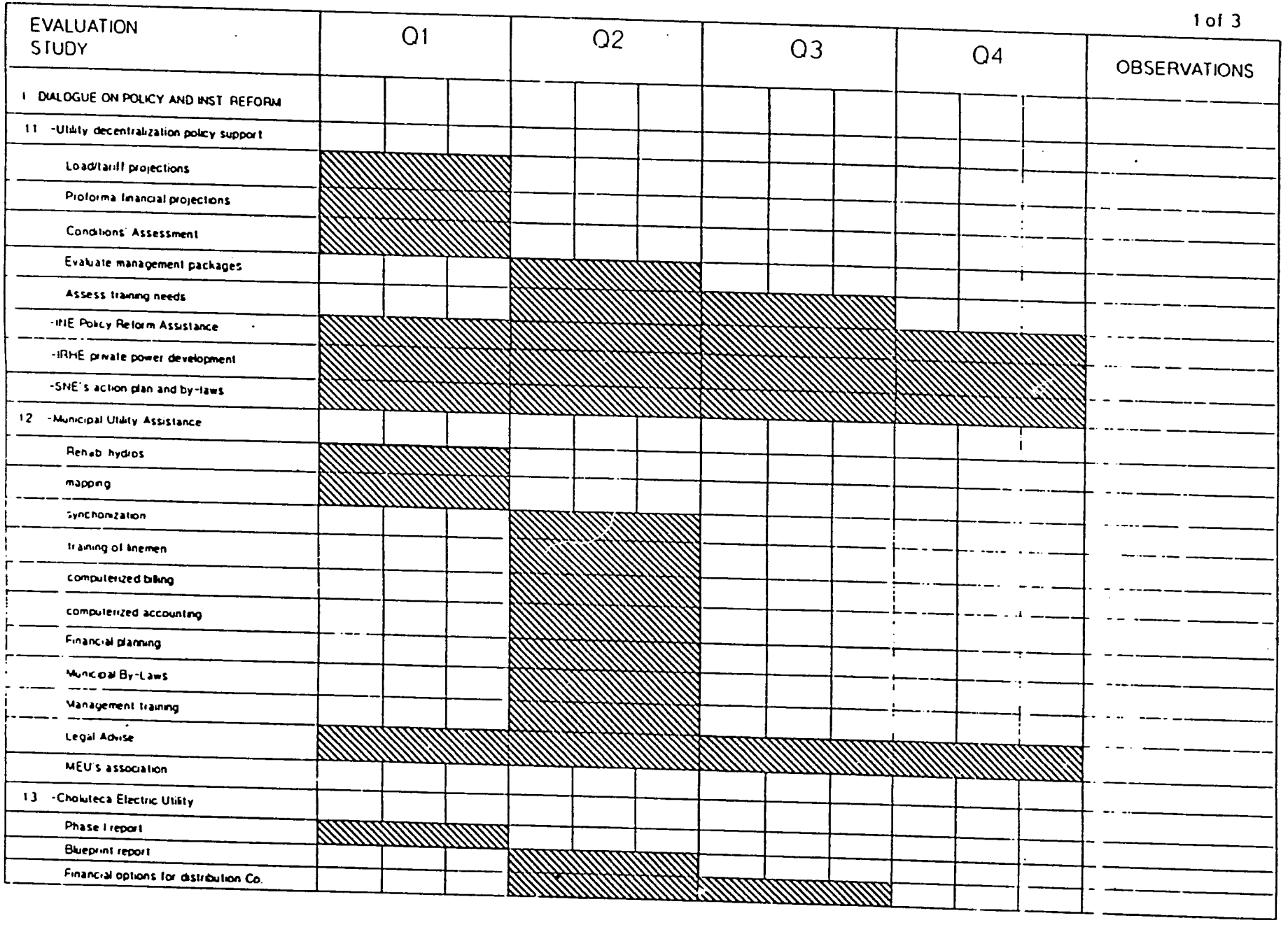
Narrative Summary (NS)	Objectively Verifiable Indicators (OVI)	Means of Verification (MOV)	Important Assumptions (IA)
Project Goal: To increase rural access to the benefits of existing and planned power sector investments in Central America, Belize, and Panama by making rural electrification and renewable energy programs technically, financially, and economically more efficient.	-Number and annual rate of growth of rural connections in the region between 1987 and 1994. -Number of Kwh sold to rural consumers in the region from 1987 and 1994. -Number of pilot RET projects implemented/appraised by the program in the region in 1994. -Number of rural connections served by RET as direct result of program interventions in the region during FY94. -Number of person-hours of renewable energy training by CARES in the region during FY94. -Number of copies of renewable-energy-related material disseminated by CARES in the region during FY94.	- Project records, utility records, investment records, funding institution records. -Audit reports. Periodic evaluations. -Project records -Project records -Project records -Project records	-Governments give high priority to rural electrification programs and their management and operations. -Relative stability is maintained in each country. -There is an adequate power supply. -Price, investment, and regulatory framework allows for RET-based generation and distribution. -Public utilities are willing to let go significant rural markets from conventionsl, central-grid supply to RET's.
Project Purpose 1: Establish an effective, diversified set of institutions to promote and support rural electrification.	-Load and tariff projections for at least one new distribution company estimated. -Preliminary assessment of generation, transmission, and distribution conditions for at least one distribution company completed. -Preliminary training needs for one distribution company assessed.	-Project records	-GOH willing and able to continue decentralization of ENEE's operations.
Increase the ability of municipal utilities to provide and sustain rural electrification in at least, one country with provisions to transfer experience to other countries in the region.	-Two municipal hydroelectric systems rehabilitated. -One electrical system mapped. -Two municipal generating systems tc INDE's grid synchronized.	-Municipal assistance case study -Project records	-Sufficient local funding is available to improve the operation of municipal utilities. -Generating capacity exists to satisfy increased demand.

Narrative Summary (NS)	Objectively Verifiable Indicators	Means of Verification (MOV)	Important Assumptions (IA)
Project Purpose 2: Raise and maintain adequate levels of technical/managerial skills in regional institutions that promote rural electrification.	-A regional seminar focused on the application of new rural electrification distribution standards is conducted. -Skill improvement courses for managerial and technical staff working in Ometepe and Choluteca's decentralized electric utilities are implemented. -A regional workshop for the closing of CARES' support to partner P.U. agencies is organized, and guidelines of intra-agency cooperation and follow up for the P.U. programs in the region are established.	-Project records	-Technical staff from decentralized/private utilities are willing and able to participate in training.
	-IRHE's undertakes a series of efficiency studies, including those of: a) technical and non-technical losses, b) load forecasting and management, c) demand-side management and conservation, d) distribution system planning and analysis, and e) general energy planning methodologies and modeling. -Assistance to IRHE to adopt a mechanism for incorporating private power into its system continues. -Guatemala's technical losses evaluation study is updated.	-Efficiency studies' reports -Project records	-GOP is willing and able to continue working with CARES. -Price, investment, and regulatory policies allow for private participation in the electric sector in the country.
	-NGO's managing productive uses of electricity (PUE) credit programs prepare at least two funding proposals to international private, bilateral, or multilateral donors. -Policy and operational lessons from CARES' PUE credit projects complied and assembled in a PUE credit guidelines manual. -A regional methodology for calculating tariffs (TUCA) is completed. -Final report on the institutionalization of DAM in the region is completed.	-Funding proposals -Manuals -Project records	-Regional utilities willing to participate in the definition of a common methodology. -Consumers willing and able to adopt demand-side management initiatives.

Narrative Summary (NS)	Objectively Verifiable Indicators (OVI)	Means of Verification (MOV)	Important Assumptions (IA)
	-Computerized billing and collection methods in two municipal utilities implemented. -Automated accounting and financial planning methods in two municpal utilities adopted. -Municipal by-laws written in five utilities. -Employees trained on legal matters in the six utilities. -Municipal utilities assisted in Guatemala in the formation of a MEU association.	-Municipal assistance case study -Project records	-Sufficient local funding is available to improve the operation of municipal utilities. -Generating capacity exists to satisfy increased demand.
Increase other private sector roles in rural electrification and productive uses promotion.	-Prefeasibility study (Phase I Report) of the Choluteca decentralization project is conducted. -Charter for Choluteca's Electric Company and contract with ENEE are drafted. -Options for financial support for the creation of Choluteca's autonomous distribution company are developed.	-Phase I and Phase II reports -Project records	-GOH willing and able to undertake the privatization of another electric utility. -Price, investment, and regulatory policies allow for private participation in the electric sector in the country.
	-Ometepe's electric company is legally registered. -Technical assitance is continued, including line staking, service upgrades, new services, capacitor analysis, lineman training, mapping, metering, work order procedures. -Management and financial assistance continued. -Institutional and policy reform at INE is continued by transferring CARE's experiance with decentralized/private power initiatives in the region.	-Phase I and Phase II reports -Project records	-GON and INE willing and able to continue support to NRECA's initiatives in Ometepe. -Price, investment, and regulatory policies allow for private participation in the electric sector in the country.
	-CONELECTRICAS assisted with the design and implementation of Demand-Side Management projects and associated engineering and procurement services. -IRHE assisted to promote private power development.	-Project records	-Price, investment, and regulatory policies allow for private participation in the electric sector in the country.

Narrative Summary (NS)	Objectively Verifiable Indicators (OVI)	Means of Verification (MOV)	Important Assumptions (IA)
Project Purpose 3: To increase rural Central America's use of appropriate renewable energy technologies in order to help them address their energy needs in an economically sustainable manner:	-Number of rural connections served by RET as a direct result of program interventions in the region in 1994. -Number of pilot RET projects implemented by the program in the region in 1994. -Information on RET foreign suppliers, products, standards, and experiences is increasingly available in the region by 1994. -Trained trainers are in place to continue training when CARES program is completed.	-Project records	-Generation/distribution laws in the region allow for RET-based generation and distribution. -Public utilities are willing to let go significant rural markets from conventional, central-grid supply to RET's.
Release regional supply constraints (informational, organizational, and know-how) so local and foreign market forces are capable of meeting rural people's energy demand through RET on an economically sustainable basis.	-Data needed to generate a wind map for Guatemala, Nicaragua, and El Salvador compiled by end of FY94. -Four brochures illustrating potential application of RET in the region produced/disseminated. -Two photovoltaic systems approaised in national parks in the region. -One financial mechanism for developing wind-based generation projects in Guatemala and El Salvador developed.	-Project records	-Supply markets are competitive. -Current and future price of alternative fuels will reflect economic costs. -Central-grid options supply electric services at a pace that is slower, and at economic/environmental costs that are higher than those of RET's.
Help people develop effective organizations that supply RET-based electricity and productive uses of RET-based electricity. Promote regional training and education on the technical aspects of RETs.	-Number of agencies that began working in RET's as the result of program interventions in the region by 1994. -Two pilot projects with municipal electric utilities implemented. -One privately financed wind project implemented in Guatemala. -RET-based promotion/credit program for residential uses of P.U. in Honduras drafted. -Two P.U. pilot projects with rural electric cooperatives in Costa Rica implemented. -Four training events on RET applications in three countries completed by 1994. -Number/distribution of trainees who received CARES training in the region during 1994.	-Project records	-Organizations willing to work with RET in the region exist. -RET solutions create enough interdependency among users and/or economies of scale to grent the functioning of an organization.

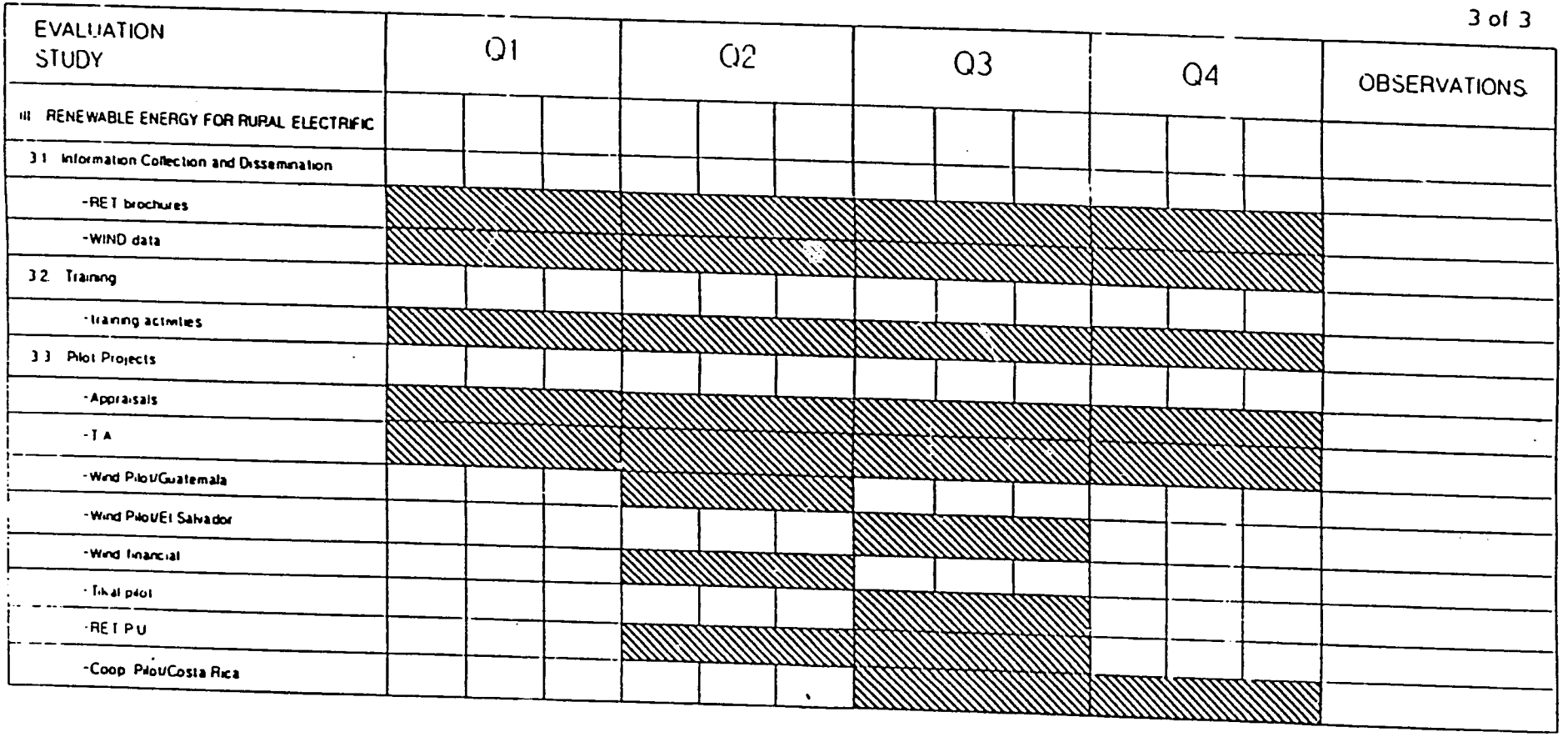
CARES AMENDMENT: MONITORING PLAN



CARES AMENDMENT: MONITORING PLAN

EVALUATION STUDY	Q1			Q2			Q3			Q4			OBSERVATIONS
I DIALOGUE ON POLICY AND INST REFORM (cont'd													
14 Ometepe Electric Utility													
-Legal assistance													
-Prospectus													
-Financial Analysis													
-Communication program													
-Technical assistance/training													
-Management assistance/training													
15 Conelectricas Assistance													
II ENHANCEMENT OF OPERATIONAL EFFICIENCY													
2.1 Ops & Admin Training & Technical Assistance													
-Regional standards seminar													
-Ometepe's operation training													
-Cholutecа's operation training													
-Ometepe's management training													
-Cholutecа s management training													
-P U Regional Seminar													
2.2 Energy Efficiency													
-IRHE's efficiency studies													
-IRHE's private power assistance													
-Guate Technical losses study													
-P U funding proponsals													
-Credit manual													
-Promotion manual													
-Conelectricas Demand-Side Management													
-TUCA's methodology assistance													
-DAM institutionalization report													

CARES AMENDMENT: MONITORING PLAN



"Annex E"

DETAILED AMENDMENT BUDGET BY COMPONENT
SUMMARY COST ESTIMATES
By Line Item Break-down
(In U.S. $)

PROJECT COMPONENTS	
1. Dialogue on Policy and Institutional Reform	
Salaries	61.8
Staff members (8 persons 256 days)	
Fringe Benefits (34% over salaries)	21
Overhead (70.79% over salaries)	43.7
Travel and Transportation	78
CA (6 trips ~$360 $2,160)	
International (6 trips ~$800 $4,800)	
Per diem	
Urban $120/day 403 days $48,400	
Rural $50/day 453 days $22,650	
Allowances (Post diff., housing, educ.)	6.5
Other Direct Costs	114
Professional fees (13 persons 224 days $54,800)	
Training $40,200	
Other (office space, insurance, etc.) $19,000	
Equipment and Supplies	
Subtotal	325
2. Enhancement of Operational Efficiency	
Salaries	84
Staff members (5 persons 349 days)	
Fringe Benefits (34% over salaries)	28.6
Overhead (70.79% over salaries)	59.5
Travel and Transportation	37
CA (15 trips ~$360 $5,400)	
International (8 trips ~$800 $6,400)	
Per diem	
Urban $120/day 158 days $18,900	
Rural $50/day 126 days $6,300	
Allowances (Post diff., housing, educ.)	8.4
Other Direct Costs	43.5
Professional Fees (5 persons 112 days $27,000)	
Training $12,500	
Other (office space, insurance, etc.) $4,000	
Equipment and Supplies	
Subtotal	261

...2

PROJECT COMPONENTS		
Page 2		
3. Renewable Energy for Rural Electrification		
Salaries		103
Staff members (7 persons 427 days)		
Fringe Benefits (34% over salaries)		35
Overhead (70.79% over salaries)		72.9
Travel and Transportation		28.9
CA (10 trips ~$360 $3,600)		
International (4 trips ~$800 $3,200)		
Per diem		
Urban $120/day 46 days $5,500		
Rural $50/day 332 days $16,600		
Allowances (Post diff., housing, educ.)		15.4
Other Direct Costs		242.3
Professional Fees (8 persons 689 days $166,100)		
Training $61,200		
Other (office space, insurance, etc.) $15,000		
Equipment and Supplies (comp. software)		2.5
	Subtotal	500
4. USAID/ROCAP Regional Electric Power Sector Initiative		
Salaries		11.8
Staff members (1 person 62 days)		
Fringe Benefits (34% over salaries)		4
Overhead (70.79% over salaries)		8.4
Travel and Transportation		4.3
CA (1 trips ~$380 $380)		
International (1 trips ~$800 $800)		
Per diem		
Urban $120/day 26 days $3,120		
Allowances (Post diff., housing, educ.)		0.5
Other Direct Costs		
Equipment and Supplies (comp. software)		
	Subtotal	29
5. Monitoring and Evaluation		
Salaries		6
Staff members (1 person 25 days)		
Fringe Benefits (34% over salaries)		2
Overhead (70.79% over salaries)		4.2
Travel and Transportation		9.2
CA (6 trips ~$360 $2,160)		
International (1 trips ~$800 $800)		
Per diem		
Urban $120/day 31 days $3,740		
Rural $50/day 50 days $2,500		
Allowances (Post diff., housing, educ.)		0.3
Other Direct Costs		27.3
Professional Fees (1 person 113 days)		
Equipment and Supplies (comp. software)		
	Subtotal	49

...3

PROJECT COMPONENTS	
Page 3	
6. CARES Program Administrative Costs	
Salaries	52.3
Staff members (4 persons 217 days)	
Fringe Benefits (34% over salaries)	17.8
Overhead (70.79% over salaries)	37
Travel and Transportation	7.5
CA (12 trips ~$355 $4,260)	
Per diem	
Urban $120/day 27 days $3,240	
Allowances (Post diff., housing, educ.)	73.3
Other Direct Costs	48.1
Training $8,100	
Other (office space, insurance, etc.) $40,000	
Subtotal	236
DOE/ORNL PASA	100
TOTAL	1500