



Increased Use of Renewable Energy Resources Program (FENERCA)

FINAL REPORT

USAID-sponsored Leader with Associates Cooperative Award

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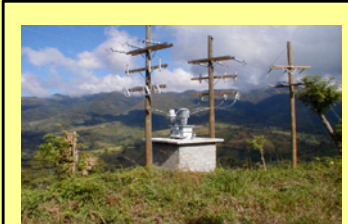
EXECUTIVE SUMMARY

The Increased Use of Renewable Energy Resources Program, known as **FENERCA** for its Spanish acronym (*Financiamiento de Empresas de Energía Renovable en Centro America*), was a US \$5.3 million/5 year USAID Leader with Associates Cooperative Agreement that was awarded to E+Co and initiated in April 2000. FENERCA's objective was to promote the development of renewable energy enterprises and projects, while increasing the capacity of financial institutions, entrepreneurs, and NGOs to support the advancement of the region's renewable energy sector.

E+Co, in close partnership with BUN-CA (Biomass Users Network-Central America), began implementation of the FENERCA program in the USAID assisted countries of Guatemala, El Salvador, Honduras, Nicaragua and Panama. Originally, the program was approved as a US \$1.7 million/18-month initiative in Central America; however, given the success of early actions, the program was extended for a total period of 5 years and in additional markets in Africa (Ghana, South Africa, Tanzania and Zambia) and South America (Brazil).

Other partners that contributed to the implementation of FENERCA included EEAF (Environmental Enterprises Assistance Fund), PA Consulting (formerly Haggler Bailly), IEE (Instituto Eco Engenho) and IDER (Instituto de Desenvolvimento Sustentável e Energias).

Honduran Hydroelectric Plant Delivering Clean Energy to the Local Grid



Snow Mountain is a 480 kW hydroelectric plant, fully operational and generating electricity for ENEE, the Honduran state-owned utility. The project is located in the town of San José de Oriente, Municipality of Ilama, department of Santa Barbara. It has greatly contributed to the benefit of many of the 410 families that live in this community.

Positive social and environmental impacts include direct and indirect job creation, improvement in the town's quality of water and delivery of electricity to the local school. The project will offset the emission of approximately 20,000 Tons of CO₂ over the next ten years.



The FENERCA program supported the entrepreneurs behind Snow Mountain with capacity building and enterprise development services for the preparation of its business plan and assessment and quantification of its carbon offset potential. This analysis led to a \$250,000 E+Co loan used to cover 60% of the total cost of the project. FENERCA's intervention in the policy arena was key to the approval of Snow Mountain's power purchase agreement (PPA), allowing the project to sell its electricity to ENEE.

This is the final report of the five year implementation program (April 2000 –July2005) including a cumulative assessment of FENERCA's accomplishments.

E+Co and its implementation partners achieved significant results, with a quantifiable impact on the use of renewable energy in the targeted countries. The program also led to an increase in the support for renewable energy from the local governments. Deliverables were

completed as anticipated, in many cases exceeding the targets that were set by the program; costs remained within the overall financial budget.

HIGHLIGHTS

- 108,953 people now have access to new and clean energy services, through solar home systems, solar water heaters, hydro electricity and biomass electricity that is being delivered to the local grids in Brazil, Guatemala, Honduras, Nicaragua and South Africa.
- Approximately 80,000 additional people will soon have access to clean energy services through solar home systems currently under installation and hydro and biomass projects being built in Guatemala, Nicaragua and Tanzania.
- A US \$15 million dollar fund for investment in clean energy was created in Central America.
- Over US \$36 million of funds were mobilized to support renewable energy initiatives, including direct investment in 23 renewable energy enterprises.
- 112 renewable energy enterprises were supported with Enterprise Development Services (EDS) in the ten targeted countries.
- 62 Business Plans were completed.
- More than 1,850 people were trained on renewable energy, including entrepreneurs, government officials, financial institutions and NGO representatives
- 12 different manuals and documents on renewable energy were developed and distributed to over 3800 entrepreneurs and stakeholders in the ten targeted countries (including an Energy Entrepreneurs Toolkit, an Off-Grid Manual, a Carbon Manual, a Monitoring and Evaluation Manual and a Financing Hydroelectric Projects Manual).
- Elaboration and distribution of a policy document on "Renewable Energy Promotion in Central America: Opportunities for Policy Intervention" (*Promoción de Energía Renovable en Centro América: Oportunidades para el Planteamiento de Políticas*).
- Three meetings of Regional Energy Authorities were held in Central America (2001, 2003 and 2004), with the participation of high level energy officials from the Energy Ministries of Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama.
- Assistance was provided to the Energy Commission of the Honduran Congress in drafting legislation on "Incentives for renewable energy projects".

Following is a summary of the FENERCA program activities and results by task. The program's success however, results from the team's ability to integrate the many tasks into a continuation of products and services to the multi-client base of entrepreneurs, financial institutions, NGO's and policy makers. Noted in each task will be reference to other related tasks as appropriate.

FENERCA achieved the following results for each of the designed tasks:

TASK CA1: RAPID ASSESSMENT AND FINAL WORK PLAN DEVELOPMENT

This task was implemented during the first 5 months of the FENERCA program (April – August 2000). The purpose of this task was to perform rapid assessments of the state of the renewable energy sector and to consult with local stakeholders in Guatemala, El Salvador, Honduras, Nicaragua and Panama on the implications of the current trends for renewable

energy development. The purpose was to identify what was being done well and the gaps in terms of policy, project finance and capacity building interventions in the renewable energy arena. These assessments provided a point of reference to ensure that subsequent interventions by FENERCA would make sense given the stage of energy sector reform, political environment and other conditions.

- A program implementation team was established, including E+Co staff (from its offices in Costa Rica and the United States), BUN-CA personnel and in-country representatives in each of the five originally targeted countries in Central America; specific priorities were identified and the program's Final Work Plan was completed. This task was fully completed in August 2000.
- A total of 537 surveys were distributed among project entrepreneurs, financial institutions and development organizations, exceeding the program's anticipated result of 400 surveys. A 22% response rate was obtained.
- A larger than anticipated number of entrepreneurs, government organizations and financial institutions were reached and a larger than anticipated number of projects and entrepreneurs willing to receive assistance from FENERCA were identified.
- Explicit targets were established for all program-related tasks.

TASK F1: ENTERPRISE DEVELOPMENT SERVICES AND COMPLETION OF BUSINESS PLANS

Through this task, the FENERCA team provided enterprise development services to entrepreneurs developing small and medium renewable energy projects in the ten targeted countries. The provision of Enterprise Development Services (EDS) included technical assistance, financial analysis and business plan structuring with the goal of strengthening the entrepreneur's capacity to produce viable business plans and to attract financing for the projects/enterprise. The development of well-structured business plans was one of the fundamental components of the FENERCA program and the core of its success.

The expected results of this task included the provision of enterprise development services to 59 entrepreneurs, with a specific deliverable of producing 48 "bankable" business plans. FENERCA exceeded the anticipated deliverables. This task combined activities undertaken under task F3, Capacity Building for Entrepreneurs, with specific training sessions to entrepreneurs, which provided a solid foundation for further enterprise development and investment.

- FENERCA's pipeline consisted of over 200 renewable energy business opportunities at different stages of development.
- 112 renewable energy enterprises were supported with Enterprise Development Services (EDS) in the ten targeted countries.
- 62 Business Plans were completed.
- 21 FENERCA supported enterprises are currently in operation, including:
 - 13 solar companies in Brazil, El Salvador, Guatemala, Nicaragua, Tanzania and South Africa that have installed about 2,000 systems (SHS - solar home systems, solar water heaters, solar dryers, irrigation units and water pumps).
 - 5 hydro enterprises are delivering 10 MW of clean energy to the local grids in Honduras and Guatemala.
 - 3 biomass enterprises with over 15 MW of biomass power potential

- 7 FENERCA supported enterprises in construction or initial start-up will:
 - Deliver over 19 MW of new and clean energy in Guatemala, Honduras and Nicaragua.
 - Install approximately 15,800 solar home systems in Nicaragua, El Salvador and Tanzania.

South Africa Company Uses the Sun to Generate a Profit



NEW ENERGIES, a South African company, is becoming the leading supplier of solar-heated water to large institutions. Traditionally companies sell the solar water heating equipment to customers. However, the high upfront capital cost is the biggest market barrier for industrial customers. New Energies is taking an innovative approach by being a service provider of hot water.

New Energies provides its customers with a retrofitted solar water heater that supplies daily hot water at a cheaper price than current hot water costs. Costs and maintenance of the system are borne by New Energies thereby overcoming the prohibitive initial upfront capital requirement.



New Energies' customers include commercial institutions such as schools, universities, hospitals, restaurants, hotels, hostels and retirement homes. Each of these customers has a high daily consumption of hot water. New Energies directly reduces the demand of energy in a country where 73% of the generation is fossil fuel based and 25% of all electricity use is for water heating. The reduction in fossil-fuel based electricity offsets environmentally negative greenhouse gases.

FENERCA provided New Energies enterprise development services and next stage finance assistance. This intervention led to an E+Co investment of \$253,000 in seed capital for the implementation of a well-defined expansion plan.

TASK F2: STRENGTHENING OF FINANCIAL INSTITUTION CAPACITY

Group training sessions and follow-on seminars were held to strengthen the capacity of local and regional financial institutions to evaluate the technical, financial and business dimensions of renewable energy projects. The FENERCA team appraised different levels of interest and capacity among the participating financial organizations to finance energy projects. The team then selected the financial institutions most interested in renewable energy and rural development finance and conducted training sessions in Central America and "one-on-one" working sessions in Africa to analyze specific project opportunities for financing and determine co-financing possibilities. The targeted work included use of technology-specific financing manuals, such as Financing Hydroelectric Projects (Task F12 - Manual development and Manual improvement), which were deemed valuable by the participating institutions. Also included in this task was the continuing exploration of opportunities for participation by the financial institutions on a co-financing basis or

establishment of dedicated capital flows for renewable energy (Task F4- Next stage financing).

- 26 workshops, seminars and “one-on-one “ working sessions targeted to financial institutions were organized in Brazil, El Salvador, Guatemala, Honduras, Nicaragua, Panama and South Africa.
- Representatives of 134 financial institutions (commercial banks, micro credit and other financial intermediaries) were trained and exposed to renewable energy.
- Increased interest from local financial institutions in financing renewable energy projects was achieved.
- Local financial institutions disbursed over US \$30 million to 24 different enterprises.

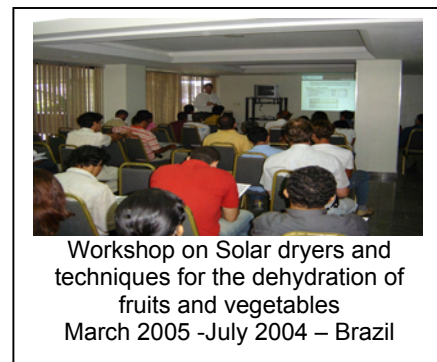


TASK F3: CAPACITY BUILDING FOR ENTREPRENEURS AND NGOS

This task was aimed at strengthening the capacity of NGOs and entrepreneurs to understand the nature of a business-like renewable energy enterprise, and the elements required in preparing a business plan for presentation to potential investors. A series of comprehensive training sessions on Business Plan Development were conducted by the FENERCA team. Entrepreneurs needing more targeted training sessions participated in intense “one-on-one” working sessions to structure concrete project proposals and outline specific business plans.

The objectives of the “one-on-one” training sessions were to broaden the entrepreneurs’ abilities to develop a business plan and to assist them in the preparation of plans that were robust from a financial, technical, management and market perspective, with the goal of attracting additional financing.

- More than 1,300 entrepreneurs and NGO representatives were trained on renewable energy.
- 21 workshops and 32 “one-on-one” working sessions were organized directly by FENERCA.
- Training packages were developed for all training sessions, including Generalities of Renewable Energy Technologies, Solar Water Heaters, Solar Dryer Uses and Techniques for the Dehydration of Fruits and Vegetables, Wind Water Pumping Uses and Installation, PV (see Task F12 - Manual development and Manual improvement).
- US \$ 73,000 of cost-sharing for the organization of working sessions was leveraged from FOCER (a UNDP-GEF sponsored program), Citigroup Foundation and B-REED (Brazil Rural Energy Enterprise Development program).



TASK F4: ORGANIZING NEXT-STAGE FINANCING

The ultimate goal of this task was to obtain financing for renewable energy projects and enterprises in the targeted countries through the identification of financial resources and development of innovative financing mechanisms. This task was composed of two activities: (1) Present at least 24 business proposals to third party financial institutions and find investment capital for at least 6 of them, (2) Create a clean energy investment fund.

- 46 enterprises were presented to Financial Institutions for investment consideration
- US \$1,925,995 of financing was disbursed by E+Co to 15 specific renewable energy enterprises. Through these investments E+Co exceeded its original cost-share commitment of US \$1.2 million. These investments were a direct result of FENERCA'S training efforts and Enterprise Development Services provided as part of tasks F1 and F3, which translated into stronger entrepreneurial capacity and sound projects.
- US \$243,240 soon to be disbursed by E+Co to 3 specific renewable energy enterprises.
- US \$34,893,563 invested by other local financial institutions in 10 enterprises.
- Additional US \$4,996,400 committed by local financial institutions to finance 8 enterprises
- US \$15 million investment secured for the creation of a Central American Renewable Energy and Cleaner Production facility (CAREC). CAREC is expected to make its first investment by the end of 2005.
- A Concept Paper was developed for the creation of a US \$20 million Brazilian Investment Fund.

New Clean Energy Investment Fund to Begin Operations in Central America

The creation of the **Central American Renewable Energy and Cleaner Production Facility (CAREC)** was possible with the support of USAID through the FENERCA program. CAREC reached its first closing milestone, raising US\$15 million of a total targeted capitalization of US\$20 million. CAREC, managed by E+Co Capital Latin America, a subsidiary of E+Co, Inc., was initiated with core financial and institutional support from the Multilateral Investment Fund (MIF) of the Inter-American Development Bank. CAREC expects to begin operations in October 2005. Through FENERCA, E+Co engaged in numerous activities that paved the way for the development of the Fund, including the training of energy entrepreneurs and preparation of business plans, the engagement of local financial institutions for co-financing and inputs to the design of regional renewable energy policy frameworks, all of which enhanced the environment for investments in clean energy.

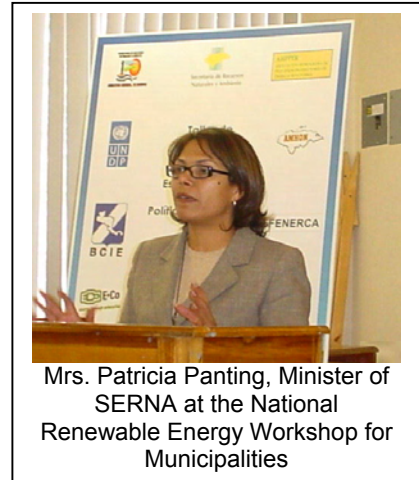
CAREC will invest in renewable energy, energy efficiency and cleaner production projects in Central America. The focus will be on small and medium-sized enterprises, with annual revenues of up to US\$5 million and less than 100 employees. The Facility is structured to utilize mezzanine-financing mechanisms such as subordinated debt, convertible debt, preferred shares and other quasi-equity instruments. Since renewable energy and energy efficiency provide ideal vehicles for reducing carbon emissions, CAREC will also seek to include opportunities for selling carbon emission reduction credits. This additional revenue stream is expected to add to the potential return on many clean energy deals.

In addition to MIF, CAREC's investors include the Central American Bank of Economic Integration (CABEI), The Belgian Investment Company for Developing Countries (BIO) and the Finnish development finance company, Finn Fund. The USAID Development Credit Authority (DCA) has also approved a US\$5 million loan guarantee to be used in support of private sector debt to the fund.

TASK F5: DEVELOPING REGULATORY AND POLICY OPTIONS FOR RENEWABLE ENERGY PROJECTS

This task assessed barriers that impeded the implementation of renewable energy projects in Central America recommending and promoting regulatory and policy options to encourage the development of and investment in such projects.

- Task implemented under the leadership of E+Co's partner, BUN-CA.
- A targeted policy document on the main barriers to renewable energy project implementation in Central America was developed.
- In 2001, 2003 and 2004 FENERCA convened high level meetings with senior level representatives from the Energy Ministries of Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama to review the program's policy document. The energy directors discussed the major barriers to the development of renewable energy projects and identified concrete mechanisms to address these barriers and further develop and promote investment in the region. The meetings provided a unique opportunity to discuss current policy trends in Central America and to solicit input from the senior level representatives on potential barrier removals. As a result of this activity, local regulatory authorities strengthened the work they are currently undertaking in the energy field.
- Organized and sponsored 8 workshops on policy and renewable energy, targeted to national authorities in Honduras, Nicaragua and Panama. 288 government officials and NGO representatives were trained as part of these workshops.
- The five targeted Central American countries initiated actions towards the removal of barriers that impede the implementation of small-scale renewable energy projects in the region. The FENERCA team assisted the Energy Commission of the Honduran Congress in drafting legislation on "Incentives for Renewable Energy Projects".
- Work with the electric utility in Honduras led to the approval of 18 power purchase agreements (PPAs). 6 of these enterprises secured financial support through FENERCA's assistance and are either in operation or under construction (Cececapa 2.8 MW, Snow Mountain 484 kW, La Esperanza 13.5 MW, Yojoa 630 kW, Tres Valles 12.3 MW, and Cenit 520 kW).



Mrs. Patricia Panting, Minister of SERNA at the National Renewable Energy Workshop for Municipalities

TASK F6: PROJECT MANAGEMENT, MONITORING AND EVALUATION

This task was composed of two activities (1) Program Management and (2) Monitoring and Evaluation. The objective of the **Program Management** activity was to provide hands-on, consistent, detail and results-oriented management interaction among all the task leaders and program managers in order to ensure adequate and timely performance and reporting. The purpose of **Monitoring and Evaluation (M&E)** was to allow rigorous follow-up on activities, investments, business plans and enterprises supported through FENERCA during its implementation.

- Periodic conference calls and monthly meetings were held among the FENERCA team members to discuss the progress of the program.
- Quarterly progress reports were prepared and submitted on time by Task Managers. The information collected through these reports provided the FENERCA management team with key information on the program's performance and was utilized to implement course corrections and improvement measures as needed to fulfill the program's objectives as well as USAID's reporting requirements.

Nicaraguan-based Clean Energy Company Provides a Solution to Lighting and Water Needs



Almost 50% of Nicaragua's population does not have access to any type of electricity services and it is estimated that more than 75% of the rural areas are still un-electrified.

Tecnosol, promotes solar, wind and hydroelectric in rural areas of northern and central Nicaragua. The enterprise provides energy alternatives for the lighting, refrigeration, water pumping and irrigation needs of businesses and communities that have no access to the main electricity grid.



The company has substantial experience in selling, installing, and servicing decentralized PV and wind systems. Since inception, the company has installed over 3000 systems on a cash basis and a small number of systems, approximately 145, on a 3 to 6 month credit basis. In the last two years, the company has experienced accelerated growth and it forecasts a 100% increase in sales in the coming years.

The energy provided by the PV systems improves the quality of life of rural families through improved lighting and access to clean water. Energy access stimulates economic activities through the creation of small businesses. Tecnosol has created nine new jobs as a result of the company's growth.



Through the FENERCA program, E+Co provided enterprise development services to assist Tecnosol in undertaking a market study for the company's expansion. Tecnosol also participated in a Financial Engineering workshop in 2001 and in 2 "one-on-one" working sessions in 2002 and 2004. E+Co has provided two loans for a total of \$300,000 to finance additional inventory purchases to expand their market and provide short-term credit to its customers.

TASK F7: MARKET OPENING

The objective of this task was to expand the FENERCA program into other markets in South America and Africa; the team evaluated and assessed different market options in the two regions, to be able to select the most appropriate ones. After extensive analysis Brazil, Ghana, South Africa, Tanzania and Zambia were selected as new markets to initiate expansion of the FENERCA program beyond Central America.

- In 2002 Brazil was selected as a new market in which to replicate the Central American FENERCA concept.

- In 2003 South Africa and Zambia was selected as a new market to replicate the FENERCA concept.
- In 2004 Ghana and Tanzania were selected as a new market to replicate the FENERCA concept.
- 3 successful “Market opening” events were held to introduce the FENERCA program and E+Co activities in Brazil, Ghana and Tanzania.

A Solar Dryer Enterprise in Tanzania Generating Income for Farmers



FADECO Trading Company Limited (FTC), is a 4-year old solar fruit drying company based in Tanzania. The company also assembles solar driers for sale to farmers and other food processing companies. Based in northwestern Tanzania, where farming is the dominant economic activity, FADECO supports more than 70 farmers by reducing post-harvest losses. Through solar drying, farmers extend the shelf life of their produce and generate increased income.

FADECO plans to continue stimulating awareness on the use of solar driers among farmers and expand its solar drier construction and sales business.



The FENERCA team supported FADECO with technical assistance for the development of a market study and assessment of additional market niches with the objective of fostering FADECO's sustainability. FENERCA also sponsored 2 workshops on solar dryers attended by 60 farmers. A handbook on Solar Drying Technology was developed in Swahili, the native language. FENERCA's support with next stage financing lead to a US\$25,500 E+Co investment in FADECO for the scale up its operations. These funds are being used to build commercial solar driers, improve its packing and processing equipment and source solar dryer materials.

Task CA8: Facilitation of Carbon Transactions

The objective of this task was to assess the five Central American targeted countries in terms of the demands and existing programs regarding carbon. The specific deliverable was to analyze five model projects in terms of their carbon potential.

This task was concluded on October 2001. However additional activities on the Climate Change front were then implemented through Task F9 with the support of the USAID Climate Change Division.

- With the support of FENERCA's in-country representatives, the program team gathered key information on fuel mixes in the five target Central American countries and developed a specific approach on how to calculate carbon emission reductions for renewable energy projects.
- FENERCA staff was trained on carbon emission reductions and provided with basic carbon calculation skills. The training built on the knowledge and expertise of Fundación Solar, a Guatemalan energy NGO. As a result, the FENERCA team was

able to standardize its carbon calculation approach and identify and analyze three projects for carbon analysis.

- Exceeding the anticipated results, FENERCA was able to analyze seven projects for carbon potential.
- In partnership with EcoSecurities, a leading carbon brokerage firm, E+Co was able to complete the first international green certificate transaction involving assets in a developing country. The transaction involved Hidroelectrica Papeles Elaborados (HPE) a hydroelectric project supported by FENERCA under Tasks CA3 and CA8 in Guatemala, and Nuon, the largest electricity distributor in the Netherlands. Nuon committed to purchase 100% of HPE's 8.2 MW carbon emissions for the next ten years. The carbon certificates will be used by Nuon as part of its green energy products. The transaction is one of the largest green certificate transactions to date.

Task F8: Productive Uses

This task was designed to identify at least 5 enterprises that were developing businesses with productive use components powered by renewable energy. The objective was to have a clear understanding of the productive use application (also known as, income generating activities) and of how a business can be developed from those applications. The idea was that these activities could be replicated in other markets through profitable enterprises. For some of the selected applications, a handbook was developed with the purpose of serving as a training basis for the possible implementation of these applications in other markets.

- 25 business opportunities with productive use applications were identified.
- 9 enterprises with income-generating applications were supported.
- 3 manuals on productive uses were developed including a manual on Solar Dryers and one on Wind Water Pumping (Task F 12).
- 1 pilot project was developed in El Salvador and is currently in operation.

Positive Environmental and Social Impacts from a Brazilian Enterprise



OPERARIAS do MEL is a start-up enterprise that outsources production of bee pollen (via an apiculture association) to 10 adolescents in a rural area of Coruipe, Alagoas. The enterprise purchases the raw pollen and processes it before selling it in the retail and wholesale markets. The pollen is processed in solar dryers that reduce the humidity of the pollen from 40% to 18%, eliminating energy costs of about R\$17,000 per year, hence significantly enhancing profitability.

Some of the social and environmental impacts achieved are job creation enhancing the quality of life, reducing urban migration, stimulating pollination of flowers, increasing coconut and fruit production, and enhancing forest preservation.



Through the FENERCA program, E+Co assisted Operarias do Mel in developing the business plan; structuring an appropriate financing mechanism to match the projected cash flow of the business; provided technical assistance for the identification of the most appropriate type of solar dryer and assistance in negotiating the contract between the enterprise and the apiculture association.

Task CA9: Support and Capacity Building of BUN-CA

The main objective of this task was to strengthen the capacity of BUN-CA (Biomass Users Network of Central America), E+Co's local partner in Central America for the implementation of FENERCA by, enhancing their ability to provide enterprise development services and business plan preparation support to renewable energy entrepreneurs as well as, develop a long term strategic work plan leading to a sustainable business plan for their organization.

- BUN-CA's network was expanded in the Central American region, and 20 NGOs are currently working as part of the organization. The extended presence region-wide has expanded BUN-CA's contacts both at the project and policy levels and has increased its channels for influencing the renewable energy market in El Salvador, Guatemala, Honduras, Nicaragua and Panama.
- Over 900 person-hours of training in business plan development and renewable energy financial engineering was received by BUN-CA, in addition to "on the ground" project preparation activities.
- With the support of FENERCA, BUN-CA has prepared a long term strategic work plan to lay the foundation for the organization's sustainability. This proposed Plan was prepared after holding several internal working meetings among BUN-CA and E+Co staff.

Task F9: Climate Change

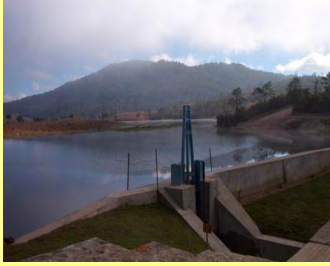
Activities implemented through this task were supported through the USAID Climate Change division. The climate change division started supporting the FENERCA program in 2002 with the objective of promoting clean energy. Overall activities under this task included:

- 1) Provision of enterprise development services and assessment of the potential carbon savings of clean energy enterprises
- 2) Support to entrepreneurs in Brazil that were incorporating productive uses applications.
- 3) Development of a pipeline and support to energy efficiency enterprises in Central America.
- 4) Support to two local NGO partners in Brazil.

Some of the results achieved through this task were the following:

- 17 businesses were supported with enterprise development services.
- 11 carbon assessments were completed for projects located in Brazil, Guatemala and Honduras.
- Development and update of a Carbon Manual (available in English, Spanish and Portuguese) (Task F 12).
- Development of an Energy Efficiency pipeline in Central America and enterprise development services provided to 3 projects in Central America.
- Capacity Building to 2 NGO, local partners in Brazil, (IEE - Instituto Eco Engenho and IDER - Instituto de Desenvolvimento Sustentável e Energias).

Honduran Hydro Enterprise Producing Triple Bottom Line Impacts



LA ESPERANZA is a 12.8 MW run of the river hydro-electric project utilizing an abandoned power house foundation. La Esperanza produces triple bottom line benefits: financial, social and environmental.

La Esperanza received support from E+Co through the FENERCA program on capacity building and enterprise development services for business plan preparation and next stage financing. FENERCA contributed to raise \$12.6 million of co-financing obtained from local and international banks in addition to E+Co's \$450,000 investment. FENERCA also assessed and quantified the carbon offset potential of La Esperanza project. FENERCA's work on the policy arena with the electric utility was key to the approval of La Esperanza's power purchase agreement (PPA).

La Esperanza is currently delivering clean electricity to the Honduran State-owned utility ENEE through a long term power purchase agreement, supplying much needed power during peak hours when the country craves additional electricity, now mainly supplied by polluting imported fuels.



Task F 10: Business Development Support (formerly Task BDS)

This task was created for FENERCA's second implementation phase (October 2001) with the objective of securing the in-country support of USAID local missions (either in kind or in the form of funding) to ensure long-term program and project sustainability.

- Over 35 meetings held with USAID local missions in Brazil, El Salvador, Ghana, Guatemala, Honduras, Nicaragua, South Africa, Tanzania and Zambia seeking to coordinate efforts with the FENERCA program.
- Participation of FENERCA members in 10 workshops and events organized and sponsored by USAID.
- Participation of USAID officials from local missions in 9 FENERCA activities such as workshops and conferences.



Mr. Cleveland O Thomas, USAID official, during **E+Co's Market Opening – Ghana**, July 7th, 2004

Task F 11: Global FENERCA – Best Practice Documentation and Sharing

This task had two components: one that focused on bringing together the full FENERCA team for two annual meetings and the other one focused on the development and implementation of a Global Management System for cross platform learning.

- 2 global FENERCA team meetings were held in April 2003 (Guatemala) and October 2004



FENERCA team - Global Meeting
Guatemala – April 2004

(Ghana) with the participation of over 20 E+Co and BUN-CA staff members at each meeting.

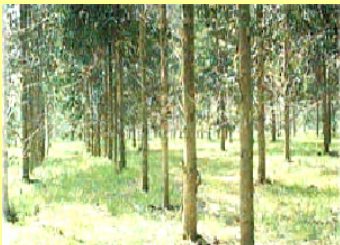
- An internet based global management system was developed for cross platform learning and integration among all regions.
- A multilingual and multicurrency loan servicing system to facilitate standardization and expansion of renewable energy investments was designed and is in the testing stage of implementation.

Task F 12: Manual development and manual improvement

The objective was to develop and disseminate manuals that complemented the program's activities on business plan preparation, carbon offset assessment, productive use applications and, monitoring and evaluation.

- 11 manuals on renewable energy topics were published.
- 1 Document on "Developing Regulatory and Policy Options for Renewable Energy Projects in Central America" was published.
- Manuals are available in English, Spanish, Portuguese and Swahili.
- ~ 3,800 copies of manuals were distributed or are being distributed in the ten targeted countries.

Biomass Fuels to Manufacture Bricks in Brazil



Ceramica Bandeira is the largest brick manufacturer in the the state of Alagoas producing 2 million pieces of four kinds of bricks monthly with 67 employees. Ceramica Bandeira is investing to upgrade its producing facilities and expand its production in order to maintain its leading local position in a competitive industry. One of the major risks that Ceramica Bandeira faces today is the lack of a reliable and affordable fuel for brick drying and firing.

E+Co, through the FENERCA and BREED programs, assisted Ceramica Bandeira in analyzing the financial returns of the project and in developing its business plan. E+Co provided a US \$ 102,000 loan to Ceramica Bandeira to finance the planting of 99 hectares of eucalyptus, along with the immediate purchase of chopping and drying machinery to increase the efficiency of burning wood logs and to allow the burning of other locally available renewable biomass fuels (bagasse and coconut shells), which need to be dried prior to combustion.

Social and environmental impacts include the creation of 42 permanent jobs for the planting, management and harvesting of eucalyptus; the utilization of cleaner and renewable fuel sources, reducing the use of coke and its negative environmental and health impacts; enhanced energy efficiency from chopping and drying equipment and a reduction of the production costs and greater fuel flexibility, ensuring sustainability for the enterprise.

INTRODUCTION

With support of the USAID EGAT/OI&E (Office of Infrastructure & Engineering) division, the Increased Use of Renewable Energy Resources Program known as FENERCA for its Spanish acronym (*Financiamiento de Empresas de Energía Renovable en Centro America*), was launched in April 2000 with an initial funding of US \$1.1 million for eighteen months. The program aimed to assist five countries in Central America (Guatemala, El Salvador, Honduras, Nicaragua and Panama) to set a course that integrates environmental and economic sustainability into their energy development agenda. Given the success of the program, four additional markets in Africa (Ghana, South Africa, Tanzania and Zambia) and one in South America (Brazil) were later included. The main objective of FENERCA was to promote the development of renewable energy enterprises and projects, while increasing the capacity of financial institutions, entrepreneurs, and NGOs to support the renewable energy sector. The program also included a policy component with the objective of promoting favorable legislation for the implementation of renewable energy enterprises.

Based on the experience and success of the first 18 months of implementation and given that FENERCA exceeded its original objectives and milestones, the program was extended and implemented for a total period of five years from April 2000 to July 2005 with, a total funding of US \$5.3 million from USAID. E+Co committed US \$1.2 million to the program as part of its cost-share requirement but, contributed a total of US \$1.9 million, making this a US \$7.2 million program.

Throughout the past five years, FENERCA was implemented by E+Co, with the support of various partners including BUN-CA (Biomass Users Network-Central America) EAAF (Environmental Enterprises Assistance Fund) and PA Consulting (formerly Haggler Bailly, supporting operations in Central America), and IEE (Instituto Eco Engenho) and IDER (Instituto de Desenvolvimento Sustentável e Energias) supporting operations in Brazil. The partners are actively involved in the clean energy sector and have been instrumental in identifying enterprises, providing enterprise development services and supporting policy interventions.

PROGRAM RESULTS

TASK CA1: RAPID ASSESSMENT AND FINAL WORK PLAN DEVELOPMENT

This task was implemented during the first 5 months of the FENERCA program (April – August 2000). The purpose of this task was to assess the state of the renewable energy sector and consult with local stakeholders in Guatemala, El Salvador, Honduras, Nicaragua and Panama on the implications of the current trends for renewable energy development. These assessments identified what needed to be done to promote the growth of the sector.

Representatives of the FENERCA team visited each of the targeted countries in Central America, met with USAID mission staff, and conducted a survey of public, private, and NGO sector stakeholders with a focus on (1) policy and regulatory framework; (2) project and enterprise opportunities; (3) financial resources and plans; and (4) capacity building opportunities.

Central American Renewable Energy Assessment

Three steps were followed to assess the Central American renewable energy sector:

First, BUN-CA and E+Co developed and distributed targeted questionnaires and surveys reaching more than 500 stakeholders in the region. Three different sets of surveys were developed to target:

- (1) Renewable energy entrepreneurs,
- (2) Financial institutions and
- (3) NGOs, non-traditional institutions and policy makers. The objective was to acquire a broader perspective of the policy and market barriers, training needs and project opportunities in each of the five target countries. Annex 1 includes the three sample surveys.

From the 537 surveys distributed, a total of 116 responses were received, constituting a 22% response rate.

Table 1 - Survey responses per country

Country	Sent	Responses	% per country	% of total response
El Salvador	132	40	30%	34%
Nicaragua	138	31	22%	27%
Honduras	114	19	17%	16%
Guatemala	55	14	25%	12%
Panama	98	12	12%	10%
Total	537	116	22%	100%

Second, E+Co and its partners updated their contact lists and gathered about 600 records. These contacts included public agencies, project developers, NGOs, service companies, consultants and financial institutions.

For the **third** and final step, In-country mission trips were undertaken to meet with several stakeholders involved in the energy sector. During these trips, targeted meetings were held with USAID’s local missions to introduce FENERCA and discuss their interest in participating in the program. Meetings were held with:

- USAID Mission-Honduras: Mr. Peter Hearne, Environmental Officer.
- USAID Mission-El Salvador: Ing. Flor de Rivera, Ms. Heidi Gomez and Mary Latino de Rodriguez from the Environment and Water Office.
- USAID Mission-Guatemala: Mr. George Carner, Director, Marta Velazquez, Director of Regional Trade Office, Brian Rudert, Income and Natural Resources, Karin MacFarland, Coordinator of TEA/Mitch Energy, Zoyla Letona, Energy and Infrastructure Department.
- USAID Mission-Nicaragua: Dr. Efrain Laureano, Reconstruction Program, Mission Economist, supervisor of energy projects.
- USAID Mission-Panama: Mr. Lars Klassen, Director, Lee Russell, Development Sustainable Director, Mr. Half Cardwell, Nilka de Varela, Specialist on Project Administration, Sergio Claire, Senior Water & Environmental Manager.

With the survey results and the targeted meetings, a preliminary project pipeline of 92 renewable energy business opportunities was identified. Of those, 23 were selected to receive Enterprise Development Services – EDS through task F1 (Enterprise Development Services and Completion of Business Plans). Table 2 shows the summary results of the projects submitted and selected for receiving FENERCA support.

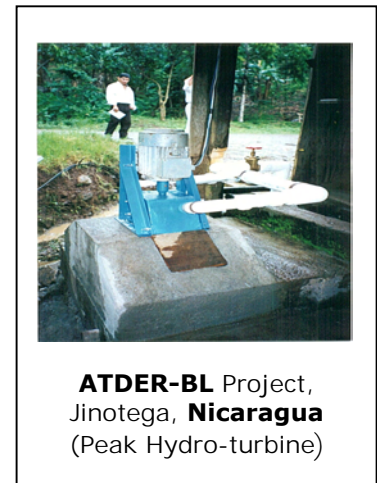
Table 2 - Number of renewable energy opportunities identified:

Country	Total	Selected
Guatemala	7	4
Honduras	17	9
El Salvador	33	5
Nicaragua	26	4
Panama	9	1
Total	92	23

Enterprise Highlights:

Among the 23 projects selected for EDS in Central America we found:

- A 630 kW mini-hydro project in Honduras
- A bagasse-based co-generation project with a 5 MW capacity in El Salvador
- A municipal energy enterprise in Guatemala
- An initiative to disseminate PV systems for water pumping in rural communities in Panama;
- A small hydro project for decentralized energy supply to an un-electrified community in Nicaragua



CA1 Summary of Expected Results and Achievements:

Expected Results Month 0 – Month 4 (April – August, 2000)	Results Achieved
Preparation and distribution of 400 surveys and other targeted outreach aimed at collecting information about stakeholder needs.	<ul style="list-style-type: none"> - 3 surveys prepared for entrepreneurs, financial institutions, and NGOs and non-traditional financial institutions - 537 surveys distributed, exceeding anticipated results (which targeted 400 surveys). <ul style="list-style-type: none"> - 188 surveys to entrepreneurs - 142 surveys to Financial Institutions (FIs) - 207 surveys to NGOs and Government Officials
25% response expected from surveys distributed	22% response rate achieved (116 surveys were answered)
Minimum of 20 projects identified	95 projects identified
Minimum of 25 stakeholders consulted	<ul style="list-style-type: none"> - Five country-specific missions undertaken - Meetings held with 80 different stakeholders (public and private organizations, NGOs and FIs).
Development and preparation of final work plan	Final Work Plan completed August 2000.
Initial review and analysis of training gaps	Main training gaps identified through surveys and analysis concluded in August 2000.
Inventory of training gaps	Inventory and database concluded in August 2000.

TASK F1: ENTERPRISE DEVELOPMENT SERVICES AND COMPLETION OF BUSINESS PLANS

Through this task, the FENERCA team provided enterprise development services to entrepreneurs developing small and medium renewable energy projects in the ten targeted countries in Central America (El Salvador, Guatemala, Honduras, Nicaragua and Panama), Africa (Ghana, South Africa, Tanzania and Zambia) and South America (Brazil). The provision of Enterprise Development Services (EDS) included technical assistance, market assessment, financial analysis, business plan structuring, and assistance obtaining investment capital.

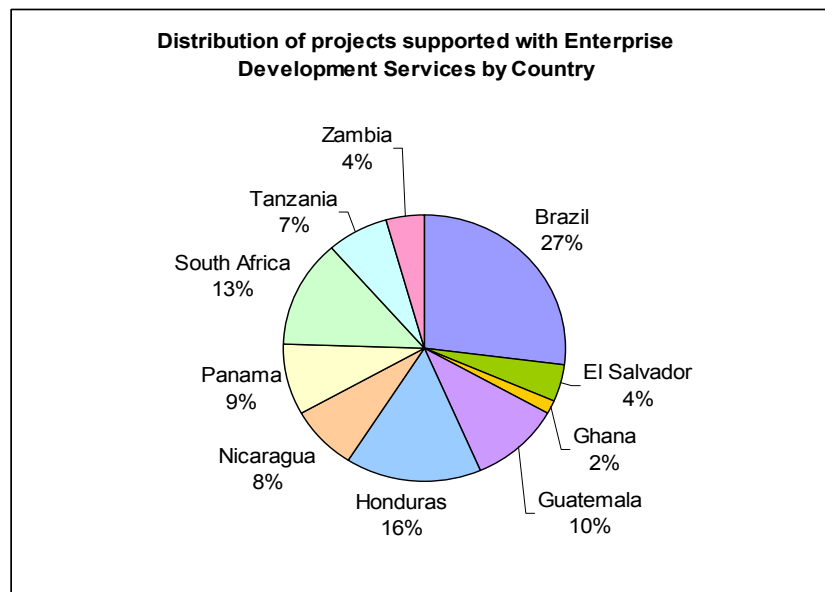
The provision of enterprise development services, with the specific deliverable of a “bankable” business plan, was one of the fundamental components of the FENERCA program. It was the core of its success in both attracting financing for renewable energy entrepreneurs and delivering renewable energy based services to households, businesses and communities.

Enterprise Development Services (EDS)

Throughout the past five years (April 2000 – April 2005), the FENERCA team created a pipeline of over 200 renewable energy projects that needed financial and business structuring support in the ten targeted countries. The team supported 115 projects/enterprises with Enterprise Development Services (EDS).

Depending on the project’s specific needs and their development phase, either a business plan was developed or specific assistance in business structuring services such as concept validation, market assessment, negotiation and implementation or financial structuring services were provided.

In addition to the enterprise development services provided to entrepreneurs, the FENERCA team assisted in the process of attracting adequate financing. Once the business plans were sufficiently robust from a financial, technical, management and market perspective, they were presented to potential investors (Task F4 – Next Stage Financing).



The FENERCA team made every effort to have a balanced representation of renewable energy technologies within the projects supported. Among FENERCA's supported enterprises the following technologies are included: hydro, biogas, biomass, PV, solar thermal and wind. Annex 2 includes the list of all 115 enterprises supported by FENERCA and their status.

Technical Assistance

In addition to EDS, FENERCA provided technical assistance through third parties to enterprises that required specialized expertise (e.g. market studies) to evaluate and define the most appropriate business model for the enterprise. The technical assistance services helped the entrepreneurs pursue the most appropriate business model. Fourteen enterprises received third party technical assistance.

Business Plans Completed

Out of the 115 enterprises/ projects supported, 62 completed a business plan. See Annex 3 for a full list. Copies of the business plans were submitted to USAID as part of the required quarterly reports.

Enterprise Highlights:

Examples of the enterprises receiving support include:

A Honduran Hydro Enterprise Producing Triple Bottom Line Impacts

LA ESPERANZA is a 12.8 MW run of the river hydro-electric project. La Esperanza produces triple bottom line benefits: financial, social and environmental.

La Esperanza received support from E+Co through the FENERCA program on capacity building and enterprise development services for business plan preparation and next stage financing. FENERCA helped this enterprise raise US \$12.6 million dollars of co-financing from local and international banks in addition to E+Co's US \$450,000 investment. FENERCA also assessed and quantified the carbon offset potential of the project. FENERCA's work on the policy arena with the national electric utility was key for the approval of La Esperanza's power purchase agreement (PPA).



La Esperanza is currently delivering and selling clean electricity to the Honduran State-owned utility ENEE through a long term power purchase agreement, supplying much needed power during peak hours when the country craves additional electricity, now mainly supplied by polluting imported fuels.

NEW ENERGIES, a South African company, is becoming the leading supplier of solar-heated water to large institutions. Traditionally companies sell the solar water heating equipment to customers. However, the high upfront capital cost is the biggest market barrier for industrial customers. New Energies is taking an innovative approach by being a service provider of hot water.

New Energies provides its customers with a retrofitted solar water heater that supplies daily hot water at a cheaper price than current hot water costs. Costs and maintenance

of the system are borne by New Energies thereby overcoming the prohibitive initial upfront capital requirement.

New Energies' customers include commercial institutions such as schools, universities, hospitals, restaurants, hotels, hostels and retirement homes. Each of these customers has a high daily consumption of hot water. New Energies directly reduces the demand of energy in a country where 73% of the generation is fossil fuel based and 25% of all electricity use is for water heating. The reduction in fossil-fuel based electricity offsets environmentally negative greenhouse gases. FENERCA provided New Energies enterprise development services and financial structuring assistance. This intervention led to an E+Co investment of US \$253,000 for the implementation of a well-defined expansion plan.



FENERCA completed and exceeded the anticipated deliverables under this task. This task combined activities undertaken under task F3 - Capacity Building for Entrepreneurs with specific training sessions to entrepreneurs, which provided a solid foundation for further enterprise development and investment.

- 21 FENERCA supported enterprises are currently in operation, including:
- 13 solar companies in Brazil, El Salvador, Guatemala, Nicaragua, Tanzania and South Africa that have installed about 2,000 systems (SHS - solar home systems, solar water heaters, solar dryers, irrigation units and water pumps).
 - 5 hydro enterprises are delivering 10 MW of clean energy to the local grids in Honduras and Guatemala.
 - 3 biomass enterprises with over 15 MW of biomass power potential

- 7 FENERCA supported enterprises will soon:
- Deliver over 19 MW of new and clean energy from projects under construction or expansion in Guatemala, Honduras and Nicaragua.
 - Install 15,800 solar home systems in Nicaragua, El Salvador and Tanzania

F1 Summary of Expected Results and Achievements:

Expected Results	Results Achieved (April 2000 – July 2005)																				
Provision of Enterprise Development Services - EDS to 59 enterprises	112 Enterprises received EDS <table style="margin-left: 40px; border: none;"> <tr><td>Brazil</td><td style="text-align: right;">30</td></tr> <tr><td>El Salvador:</td><td style="text-align: right;">5</td></tr> <tr><td>Ghana</td><td style="text-align: right;">2</td></tr> <tr><td>Guatemala:</td><td style="text-align: right;">12</td></tr> <tr><td>Honduras:</td><td style="text-align: right;">18</td></tr> <tr><td>Nicaragua:</td><td style="text-align: right;">9</td></tr> <tr><td>Panama:</td><td style="text-align: right;">10</td></tr> <tr><td>South Africa</td><td style="text-align: right;">13</td></tr> <tr><td>Tanzania</td><td style="text-align: right;">8</td></tr> <tr><td>Zambia</td><td style="text-align: right;">5</td></tr> </table>	Brazil	30	El Salvador:	5	Ghana	2	Guatemala:	12	Honduras:	18	Nicaragua:	9	Panama:	10	South Africa	13	Tanzania	8	Zambia	5
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Zambia	5																				

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<p>Develop 48 business plans</p>	<p>Total of 62 Business Plans were Completed:</p> <table data-bbox="841 285 1092 558"> <tr><td>Brazil</td><td>12</td></tr> <tr><td>El Salvador:</td><td>5</td></tr> <tr><td>Ghana</td><td>1</td></tr> <tr><td>Guatemala:</td><td>8</td></tr> <tr><td>Honduras:</td><td>10</td></tr> <tr><td>Nicaragua:</td><td>7</td></tr> <tr><td>Panama:</td><td>8</td></tr> <tr><td>South Africa</td><td>4</td></tr> <tr><td>Tanzania</td><td>7</td></tr> </table>	Brazil	12	El Salvador:	5	Ghana	1	Guatemala:	8	Honduras:	10	Nicaragua:	7	Panama:	8	South Africa	4	Tanzania	7
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Nicaragua:	7																		
Panama:	8																		
South Africa	4																		
Tanzania	7																		
<p>Support a minimum of 2 enterprises in each country</p>	<p>More than or at least 2 enterprises were supported in each country</p>																		
<p>Enterprises supported must encompass at least 5 Renewable Energy Technologies</p>	<p>Supported more than 5 RE technologies including: Hydro, PV, Solar Thermal, Biomass, Geothermal and Wind</p>																		

TASK F2: STRENGTHENING OF FINANCIAL INSTITUTION CAPACITY

Group training sessions and follow-on seminars were held to strengthen the capacity of local and regional financial institutions to evaluate the technical, financial and business dimensions of renewable energy projects. The FENERCA team appraised different levels of interest and capacity among the participating financial organizations to finance energy projects. The team then selected the financial institutions most interested in renewable energy and rural development finance and conducted training sessions in Central America and “one-on-one” working sessions in Africa to analyze specific project opportunities for financing and determine co-financing possibilities. The targeted work included use of technology-specific financing manuals, such as Financing Hydroelectric Projects (Task F12 - Manual development and Manual improvement), which were deemed valuable by the participating institutions. Also included in this task was the continuing exploration of opportunities for participation by the financial institutions on a co-financing basis or establishment of dedicated capital flows for renewable energy (Task F4- Next stage financing).

The goal was to provide training to 20-25 financial institutions. A total of 247 financial professionals were trained from 134 different financial institutions as follows:

- 6 Workshops on Financial Engineering for Financial Institutions were held in El Salvador, Guatemala, Honduras, Nicaragua and Panama in 2000 where 61 financial institutions participated and 92 people were trained.
- 5 Workshops on Financing Hydroelectric Projects were held in El Salvador, Guatemala, Honduras, Nicaragua and Panama in 2002 where 34 financial institutions participated and 52 people were trained
- 1 Finance Seminar, organized by E+Co and World Vision in Brazil, was held in March 2004; 51 people participated on the event including representation from 12 financial institutions.
- 1 Seminar on Clean Energy Investment Opportunities was held in Brazil in November 2002; 32 people participated including representation from 12 financial institutions
- 1 Workshop on Renewable Energy was held in South Africa in 2004 where 4 financiers from 4 local financial institutions participated.

13 working sessions held with different financial institutions in Ghana, South Africa and Tanzania on 2004 and 2005. During these sessions a total of 16 financial professionals participated from 11 financial institutions (8 in South Africa, 2 in Ghana and 1 in Tanzania).

Annex 4 includes the complete list of the training sessions held and the participants.

The training sessions organized by FENERCA introduced financial institutions to issues surrounding the assessment of investment opportunities in the renewable energy sector including the risks. Further work remains to be done to attract and secure the necessary investment capital for the projects currently



being structured. Financial institutions are afraid to invest in what they consider relatively new technologies requiring long-term capital. However, it is important to highlight that this situation is changing slowly and an example of such change in attitude is that several FENERCA enterprises have received financing from local banks, such as, the Papeles Elaborados project, securing US \$15 million of financing from Banco Industrial, a local Guatemalan financial institution. Other FENERCA supported enterprises (i.e. La Esperanza, Yojoa and Jones) have gotten approval for US \$12 million for financing from local financial institutions in Honduras and Guatemala (i.e. BGA, CABEI and Banco Agromercantil respectively).

The FENERCA team developed and disseminated training materials for the training sessions, which include a comprehensive “Manual on Financing Hydroelectric Projects”, used as a primary tool for the training sessions. This manual was designed specifically for the financial institution audience.

Enterprise Highlights:

Village Energia Ambiental Ltda (Village) founded in March 1999 and based in Cuiabá, the capital of the state of Mato Grosso (Center West of Brazil), distributes, sells, installs and provides maintenance for renewable energy systems, including photovoltaic, micro hydro, small wind, and biomass solutions to rural energy needs.

Village provides PV (lighting, electric fences, pumping) and micro hydro turbines, as well small wind generators, biodigestors and solar thermal water heating to companies, end-users, and government agencies (i.e. FUNASA FUNAI) for indigenous communities, schools and health posts.



FENERCA assisted Village in the development, financial structuring and the implementation plan, based on a detailed market study. It then presented Village to various potential strategic partners and other productive use applications. As a result of this assistance, Village gained access to a US \$110,000 loan from E+Co (US \$55,000) and SDG - Solar Development Group (US \$55,000). The loan was disbursed in late 2003 and has been used by Village as working capital for a pilot project to sell eight PV-powered water pumping irrigation systems under credit that will be repaid by its rural customers in 12 monthly installments. Each system will be used to irrigate one hectare of corn and one hectare of cassava for each rural farmer.

Village represents environmentally sustainable and economically viable use of Renewable Energy for increasing family income by an estimated 11x (~ from US\$150 to US\$1,750). The family increment on income will lead to substantial quality of life improvements and eventual purchase of solar home systems as electrification solutions. This project also stimulates sustainable economic development in a rural community.

F2 Summary of Expected Results and Achievements:

Expected Results	Results Achieved (April 2000 – July 2005)
Train 20-25 Financial institutions in Africa, Central America and South America	Brazil: 24 El Salvador: 18 Ghana: 2 Guatemala: 12 Honduras: 19 Nicaragua: 22 Panama: 24 South Africa: 12 Tanzania: 1 TOTAL 134 Financial Institutions trained
Train at least 44 people from the financial sector	A total of 247 financial professionals were trained
Develop at least 5 training packages for targeted distribution	Training package for Financial Institutions, including a Manual on Financing Hydroelectric Projects was developed and distributed
	As a result an increased interest from local financial institutions in financing renewable energy projects was achieved and over US \$30 million was disbursed by local financial institutions to fund 24 different enterprises.

TASK F3: CAPACITY BUILDING FOR ENTREPRENEURS AND NGOS

This task was aimed at strengthening the capacity of NGOs and entrepreneurs to understand the nature of a business-like renewable energy enterprise, and the elements required in preparing a business plan for presentation to potential investors. A series of comprehensive training sessions on Business Plan Development were conducted by the FENERCA team. Entrepreneurs needing more targeted training sessions participated in intense “one-on-one” working sessions to structure concrete project proposals and outline specific business plans.

The objectives of the “one-on-one” training sessions were to broaden the entrepreneurs’ abilities to develop a business plan and to assist them in the preparation of plans that were robust from a financial, technical, management and market perspective, with the goal of attracting additional financing.

Training sessions and seminars

The purpose of the working sessions was to strengthen the entrepreneurs capacity to develop and implement a clean energy enterprise; to understand various renewable energy technologies and the elements required in a bankable business plan for presentation to potential investors. Entrepreneurs, NGO’s and a number of regulatory institutions participated on the engineering for RE projects and Small-Scale Renewable Energy. During those sessions, introductory tools on business plan development and risk analysis were taught in great detail.

“One-on-one” working sessions with entrepreneurs

The “one-on-one” working sessions were targeted to entrepreneurs with projects at a more mature stage of development but in need of particular assistance to broaden the entrepreneurs’ abilities on market strategies, design and implementation of extension plans and redesign of business strategy among other things.

Table 3 - Summary of Seminars and Workshops held per country

21 seminars and workshops for entrepreneurs and NGOs were held in Brazil, El Salvador, Guatemala, Honduras, Nicaragua, Panama, South Africa and Tanzania. 644 people participated in these sessions:

#	Country	Date	Workshop	# of Participants
1	Honduras	July 11/12, 2000	Financial Engineering for RE projects	35
2	Panama	Nov. 8, 2000	Small-Scale Renewable Energy	52
3	Guatemala	Jan. 22, 2001	Financial Engineering for RE projects	38
4	Panama	April 2, 2001	Financial Engineering for RE projects	48
5	Nicaragua	April 5, 2001	Financial Engineering for RE projects	42
6	El Salvador	June 15, 2001	Financial Engineering for RE projects	28
7	Honduras	May 2003	Finance Seminar for CA mid-size Renewable Energy Project Developers	29

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8	Brazil	June 2003	NGO-Partner Training Session	5
9	Brazil	August 7, 2003	Technical and Financial Workshop for a Co-generation Project	15
10	Brazil	Sept 9, 2003	Entrepreneur Training Program on Business Planning	19
11	Brazil	Sept 24/25 2003	Workshop on Business Development and Funding Sources for Micro Entrepreneurs	33
12	Honduras	Jan 22, 2004	Finance for RE Projects	56
13	Brazil	February 2004	RE as a means to conduct Permiculutre	18
14	Brazil	April 27– 29 2004	Solar Water Heaters	49
15	South Africa	Feb 10&21 2005	Solar Water Heaters	7
16	South Africa	July 1 st 2004	Clean Energy	18
17	El Salvador	Dec. 1 st 2004	Wind Water Pumping	25
#	Country	Date	Workshop	# of Participants
18	Brazil	March 5 th 2005	Solar Dryers and Dehydration of Fruits and Vegetables	44
19	Tanzania	February 1 st & 2 nd 2005	Solar Dryers for Income Generating Activities	60
20	Tanzania	Jan. 27 th 2005	PV to PV Dealers	13
21	Tanzania	February 8 th 2005	Biomass Generators	10

For the implementation of this task, a total of US \$73,000 was leveraged; US \$18,000 from the FOCER program for the organization of 6 training sessions in Central America, US \$25,000 from CITIGROUP for the Finance Seminar for Central American Mid-Size Renewable Energy Project Developers and US \$30,000 from the B-REED program for the organization of 6 training sessions in Brazil.

Table 4 - Summary of “one-on-one” workshops with entrepreneurs

A of 32 “one-on-one” training sessions were held with the participation of 57 people

Country	Enterprise	Year	# of Enterprises	# of People trained
El Salvador	Eco Carbon	2002	3	2
	Sabes	2003		3
	Jocoro Farm	2004		1
Ghana	Biogass Engineering UASI	2004	2	1
		2004		1
Guatemala	Dintersa	2002	3	3
	La Laguna	2002		1
	La Castalia	2002		3
Nicaragua	Tecnosol	2002 & 2004	5	1
	Atder-B	2002		3
	Asolpic	2002		2

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	Aprodelbo	2002		3
	Asoelbo	2002		2
Panama	EPPSA	2002	3	3
	Aboquete	2002		1
	PASS SA	2002		1
South Africa	New Co	2003	6	1
	Agama	2003 & 2004		2
	Africa Wind	2004		1
	Aqua Gen	2004		1
	Ndzilo	2004		5
	New Energies	2004		5
Tanzania	BMC	2004	7	1
	FADECO	2004		1
	Katani	2004		1
	KIDT	2004		1
	MONA	2004		1
	RCI	2004		1
	RESCO	2004		1
Zambia	KBPS	2003	1	4
TOTAL			30	57

Participation of FENERCA in renewable energy workshops

As part of this capacity building task, the FENERCA team participated as speakers in 4 workshops, which had 645 attendees in El Salvador and Honduras.

- “Gender and Energy” workshop organized by Winrock International in June 2002 in El Salvador with 20 participants from El Salvador, Guatemala and Mexico.
- Workshop on Renewable Energy Projects organized by AHPPER (Asociación Hondureña de Pequeños Productores De Energía Removable) held in July 2002 where a presentation was given on financing renewable energy projects (25 people participated in the event). FENERCA co-chaired this event.
- BUN-CA participated in the First International Fair on Renewable Energy organized by SERNA in Honduras on February 22-25, 2001, with the participation of around 150 national and international participants. During this event, BUN-CA organized and coordinated a panel of experts to discuss barriers to the development of renewable energy.
- The FENERCA team (BUN-CA and E+Co), participated in the Second International Fair on Renewable Energy organized by SERNA, Euro Centro and FIDE in Honduras on February 23-25, 2005, with the participation of more than 450 participants. During this event, FENERCA, funded the participation of the energy authorities of 5 Central American countries; moderated 3 round tables on i) energy efficiency and co-generation; ii) off-grid projects (rural electrification); and iii) financial support to implement renewable energy projects; and also made two presentations about FENERCA, financing clean energy projects in Central America and the creation of a Clean Energy Investment Fund

Enterprise Highlights:

Tecnosol a Nicaraguan-based clean energy company providing a solution to lighting and water needs:

Almost 50% of Nicaragua’s population does not have access to any type of electricity services and it is estimated that more than 75% of the rural areas are still un-electrified.

Tecnosol, provides energy alternatives for the lighting, refrigeration, water pumping and irrigation needs of businesses and communities in the rural areas of northern and central Nicaragua that have no access to the main electricity grid.



Household being served by Tecnosol in rural Nicaragua

The company has substantial experience in selling, installing, and servicing decentralized PV and wind systems. Since inception, the company has installed over 3000 systems on a cash basis and a small number of systems, approximately 145 on a 3 to 6 month credit basis. In the last two years, the company has experienced accelerated growth and it forecasts a 100% increase in sales in the coming years.

The energy provided by the PV systems improves the quality of life of rural families through improved lighting and access to clean water. Energy access stimulates economic activities through the creation of small businesses. Tecnosol has created nine new jobs as a result of the company’s growth.

Through the FENERCA program, E+Co provided enterprise development services to assist Tecnosol in undertaking a market study for the company’s expansion. Tecnosol also participated in a Financial Engineering workshop in 2001 and in 2 “one-on-one” working sessions in 2002 and 2004. E+Co has provided two loans for a total of \$300,000 to finance additional inventory purchases to expand their market and provide short-term credit to its customers.

F3 Summary of Expected Results and Achievements:

Expected Results	Results Achieved (April 2000 – July 2005)																
<p>Organize 12-13 training programs for Entrepreneurs and NGOs</p>	<p>21 training programs were organized:</p> <table border="0"> <tr><td>Brazil</td><td>7</td></tr> <tr><td>El Salvador</td><td>2</td></tr> <tr><td>Guatemala</td><td>1</td></tr> <tr><td>Honduras</td><td>3</td></tr> <tr><td>Nicaragua</td><td>1</td></tr> <tr><td>Panama</td><td>2</td></tr> <tr><td>South Africa</td><td>2</td></tr> <tr><td>Tanzania</td><td>3</td></tr> </table>	Brazil	7	El Salvador	2	Guatemala	1	Honduras	3	Nicaragua	1	Panama	2	South Africa	2	Tanzania	3
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El Salvador	2																
Guatemala	1																
Honduras	3																
Nicaragua	1																
Panama	2																
South Africa	2																
Tanzania	3																

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<p>Hold at least 15 “one-on-one” working sessions with entrepreneurs</p>	<p>32 “one-on-one” working sessions were held:</p> <table border="0"> <tr><td>Ghana</td><td>2</td></tr> <tr><td>El Salvador</td><td>3</td></tr> <tr><td>Guatemala</td><td>3</td></tr> <tr><td>Nicaragua</td><td>6</td></tr> <tr><td>Panama</td><td>3</td></tr> <tr><td>South Africa</td><td>7</td></tr> <tr><td>Tanzania</td><td>7</td></tr> <tr><td>Zambia</td><td>1</td></tr> </table>	Ghana	2	El Salvador	3	Guatemala	3	Nicaragua	6	Panama	3	South Africa	7	Tanzania	7	Zambia	1				
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El Salvador	3																				
Guatemala	3																				
Nicaragua	6																				
Panama	3																				
South Africa	7																				
Tanzania	7																				
Zambia	1																				
<p>Train at least 100 entrepreneurs and stakeholders</p>	<p>701 people trained via training sessions and “one-on-one: working sessions:</p> <table border="0"> <tr><td>Brazil</td><td>183</td></tr> <tr><td>El Salvador</td><td>59</td></tr> <tr><td>Ghana</td><td>2</td></tr> <tr><td>Guatemala</td><td>45</td></tr> <tr><td>Honduras</td><td>120</td></tr> <tr><td>Nicaragua</td><td>53</td></tr> <tr><td>Panama</td><td>105</td></tr> <tr><td>South Africa</td><td>40</td></tr> <tr><td>Tanzania</td><td>90</td></tr> <tr><td>Zambia</td><td>4</td></tr> </table>	Brazil	183	El Salvador	59	Ghana	2	Guatemala	45	Honduras	120	Nicaragua	53	Panama	105	South Africa	40	Tanzania	90	Zambia	4
Brazil	183																				
El Salvador	59																				
Ghana	2																				
Guatemala	45																				
Honduras	120																				
Nicaragua	53																				
Panama	105																				
South Africa	40																				
Tanzania	90																				
Zambia	4																				
<p>Develop Entrepreneurs and NGO-specific training materials as needed</p>	<p>Training packages were developed for both “one-on-one” working sessions and general training sessions including: Generalities of Renewable Energy Technologies, Solar Water Heaters, Solar Dryers Uses and Techniques of Dehydration of Fruits and Vegetables, Wind Water Pumping Uses and Installation (Manuals developed through Task F12 – Manual development and improvement).</p> <p>Received, US \$73,000 of cost-sharing for the organization of working sessions provided by FOCER, Citigroup Foundation and B-REED.</p>																				

TASK F4: ORGANIZING NEXT-STAGE FINANCING

The ultimate goal of this task was to obtain financing for renewable energy projects and enterprises in the targeted countries through the identification of financial resources and development of innovative financing mechanisms for renewable energy projects. This task was composed of two activities (1) Finding investment capital for renewable energy enterprises and (2) Creating a clean energy investment fund.

Investment Capital for Renewable Energy Enterprises

Throughout FENERCA's implementation, financial institutions were approached for potential financing both during the training sessions conducted as part of task F2 as well as during private discussions held with project sponsors and credit officers in Africa, Central America and Brazil.

In an effort to ensure that the projects supported by FENERCA through tasks F1 (Enterprise development services and completion of business plans) and F3 (Capacity building for entrepreneurs and NGOs) reached financial closure and were subsequently built; several financial institutions were approached in search of potential financing. The FENERCA team played an important role in introducing renewable energy projects to local financial institutions. Also members of the FENERCA team played a key role as a potential co-financier and as a financial advisor to local entrepreneurs.

As a result of these efforts, a total of 46 business proposals were submitted to financial institutions (including E+Co) for financing consideration of which 23 enterprises have received US\$36,819,558 in financing. *Annex 5* includes the complete list of the 46 enterprises presented to financial institutions.

The table below shows the enterprises that have received financing and their status.

Table 5 – Funds disbursed for financing on renewable energy enterprises

#	Project	Country	Capacity and Technology	FI(s)	\$ Disbursed	Status
1	Ascima	Brazil	1 SW pump	E+Co	47,500	Operating
2	Carbo Charcoal	Brazil	2,500 m3/Biomass	E+Co	128,000	Construction to start soon
3	Ceramica	Brazil	Biomass	E+Co	102,041	Operating
4	Hidrosol	Brazil	2 SWH	E+Co	14,960	Operating
5	Operarias	Brazil	Solar Drying 400 k honey	E+Co	27,000	Operating
6	Solar Moveis	Brazil	10 solar dryers	E+Co	20,340	Operating
7	Village	Brazil	8 PV irrigation Units	E+Co SDG	55,000 55,000	Operating
8	Tecnosolar	El Salvador	300 SHS	E+Co	25,000	Operating
9	Dintersa	Guatemala	100 SHS	NRECA	50,000	Operating
10	Jones	Guatemala	3.5 MW /Hydro	E+Co Caseif Banco Agromercantil	150,000	In development

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11	Papeles	Guatemala	11 MW/Hydro	Banco Industrial	15,000,000	Operating /expansion
12	La Esperanza	Honduras	13.5 MW/Hydro	E+Co BCIE, BGA & Finn Fund	450,000 10,938,563	Operating and under construction
13	Hydro Yojoa	Honduras	630 kW/Hydro	BGA	500,000	Under construction
14	Cececapa	Honduras	2.8 MW/Hydro	CABEI	2,300,000	Under construction
15	Cenit	Honduras	520 kW/Hydro	CABEI	300,000	Under construction
16	Snow Mountain	Honduras	480 kW/Hydro	E+Co	250,000	Operating
17	Tres Valles	Honduras	12.3 MW/Biomass	CABEI	4,860,000	Operating/under construction
18	Tecnosol I and II	Nicaragua	7,800 SHS	E+Co	300,000	Operating
19	Aselbo-El Bote	Nicaragua	900 kW/Hydro	Cosude GOB/CNE	300,000 250,000	Under construction
20	Amatola	S. Africa	40 systems of Biomass and wind	ETEF	340,000	Operations to start soon
21	New Energies	S. Africa	6 ind. units	E+Co	248,154	Operating
22	MONA 2	Tanzania	6,650 SHS	E+Co	100,000	Operating
23	RCI	Zambia	17,000 kg of fert. (Biofuel/Jatropha)	E+Co	8,000	Operating
					36,819,558	

From the 23 enterprises that received financing:

- 20 MW of clean hydroelectric and biomass energy are being delivered to the local grid in Honduras (Snow Mountain, La Esperanza Phase 1A and B and Tres Valles) and Guatemala (Papeles)
- 7.1 MW of new and clean energy will be delivered to the local grid in Honduras and Nicaragua by 4 hydro and 1 biomass projects (2.8 MW Cececapa, 520 kW Cenit and 630 kW Hydro Yojoa, 2.3 MW Tres Valles in Honduras and 900 kW El Bote, Nicaragua).
- ~ 1,700 Solar Home Systems (SHS) in rural communities installed in Nicaragua (Tecnosol) and El Salvador (Technosolar), serving 8,500 people.
- 7 large-scale and 1 small scale solar water heater units installed in South Africa and Brazil by New Energies and Hidrosol where 1,583 residents have benefited.
- 13,150 solar home systems being installed in Guatemala, Nicaragua and Tanzania, by Dintersa, Tecnosol and MONA enterprises, which will serve over 65,750 people.
- 10 solar dryers being built and sold by Solar Moveis, 8 PV / irrigation units being installed by Village, 400 kilos of honey being produced on a monthly basis by Operarias do Mel in Brazil and a water pump being installed by Ascima in Brazil.
- A biomass and wind project in South Africa will start operations soon (Amatola)

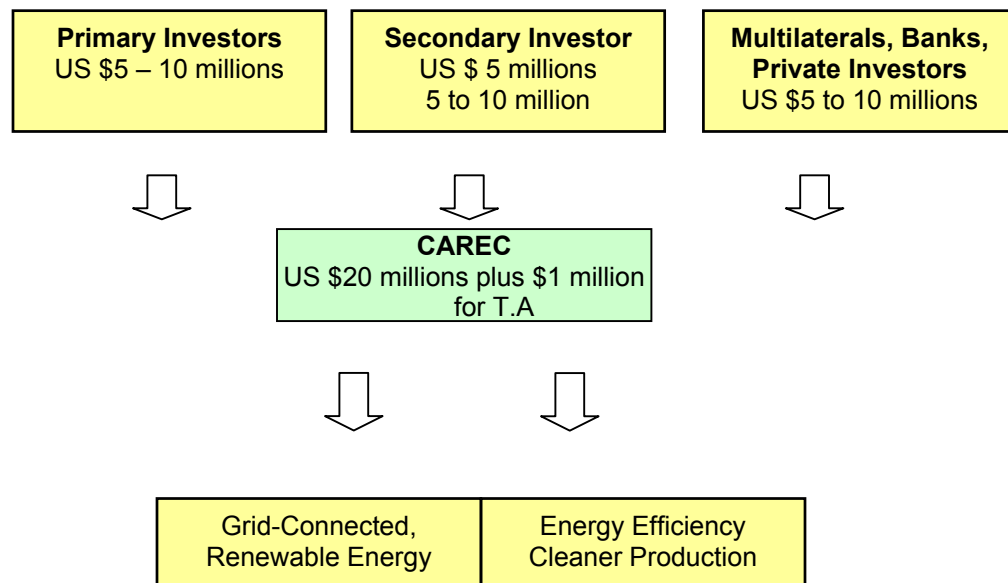
Clean Energy Investment Fund

In addition to the efforts made by the FENERCA team in organizing next stage financing for entrepreneurs and given that traditional financial institutions are reluctant to invest in the early stages of renewable energy enterprises due to their high levels of risk and long

term recovery, the FENERCA team identified the need to create a “patient capital fund” for such enterprises.

In order to assess the viability of the creation of an investment fund, exclusively focused on the clean energy sector for the Central American region, the FENERCA team undertook several in-country missions. During those missions the team engaged in initial discussions with key stakeholders such as the Central American Bank of Economic Integration (CABEI) – the regional development bank, private financial corporations, banks, entrepreneurial groups developing renewable energy projects and, the Ministries of Energy. An in depth market and policy analysis about the electricity sector in the Central American region was elaborated. The consultations and the market study confirmed the need for the fund and indicated that enough demand for renewable energy existed in the region for the next 15 years. It also showed the demand growing at a steady growth rate. Key stakeholders interested in participating in the creation of such a fund were identified. A financial structure for the facility and a marketing brochure was designed. Annex 6 includes the marketing brochure.

Financial Structure:



The facility has been named CAREC, the Central American Renewable Energy and Cleaner Production Facility. E+Co Capital, a subsidiary company of E+Co, has been created to manage and administer CAREC’s operations.

CAREC reached financial closure in July 2005 with a total US \$15 million of investment commitments secured. The USAID/Development Credit Authority (DCA) has also approved a US \$5 million portable loan guarantee to insure private sector lenders up to 50% of the face value of loans to CAREC.

The following is the breakdown of CAREC's investors:

Investor/Lender	Debt	Equity	Total
MIF – IADB	---	\$5 m	\$5 m
CABEI	---	\$5 m	\$5 m
BIO	\$1.5 m	\$0.5 m	\$2 m
Finn Fund	\$2 m	\$1 m	\$3 m
Total	\$3.5 m	\$11.5 m	\$15 m

MIF: Multilateral Investment Fund

CABEI: Central American Bank of Economic Integration

BIO: Belgian investment Company for Developing Countries

Finn Fund: Development Bank of Finland

CAREC has developed a preliminary pipeline of 46 investment opportunities ([Annex 7](#)) and is expected to make its first investment in late 2005. A brochure has been designed for potential investors ([Annex 8](#)).

In Brazil:

The FENERCA team completed a concept paper for the creation of a US \$20 million Brazilian Investment Fund (Sustainable Decentralized Brazilian Biomass generation Fund) to finance approximately 40 small-scale decentralized biomass plants throughout Brazil. The decentralized biomass generation fund concept built on the FENERCA's supported enterprise in Brazil, Ouro Branco, through Task F1 – Enterprise Development Services and Completion of Business Plans. This activity was implemented by E+Co with USAID and BREED (Brazil Rural Energy Enterprise Development program) support.

CAREC's Highlights:

NEW CLEAN ENERGY INVESTMENT FUND TO BEGIN OPERATIONS IN CENTRAL AMERICA

The creation of the **Central American Renewable Energy and Cleaner Production Facility (CAREC)** was possible with the support of USAID through the FENERCA program. CAREC reached its first closing milestone, raising US\$15 million of a total targeted capitalization of US\$20 million. CAREC, managed by E+Co Capital Latin America, a subsidiary of E+Co, Inc., was initiated with core financial and institutional support from the Multilateral Investment Fund (MIF) of the Inter-American Development Bank. CAREC expects to begin operations in October 2005. Through FENERCA, E+Co engaged in numerous activities that paved the way for the development of the Fund, including the training of energy entrepreneurs and preparation of business plans, the engagement of local financial institutions for co-financing and inputs to the design of country renewable energy policy frameworks, all of which enhanced the environment for clean energy investment.

CAREC will invest in renewable energy, energy efficiency and cleaner production projects in Central America. The focus will be on small and medium-sized enterprises, with annual revenues of up to US\$5 million and less than 100 employees. The Facility is structured to utilize mezzanine-financing mechanisms such as subordinated debt, convertible debt, preferred shares and other quasi-equity instruments. Since renewable

energy and energy efficiency provide ideal vehicles for reducing carbon emissions, CAREC will also seek to include opportunities for selling carbon emission reduction credits. This additional revenue stream is expected to add to the potential return on many clean energy deals.

In addition to MIF, CAREC's investors include the Central American Bank of Economic Integration (CABEI), The Belgian Investment Company for Developing Countries (BIO) and the Finnish development finance company, Finn Fund. The USAID Development Credit Authority (DCA) has also approved a US\$5 million loan guarantee to be used in support of private sector debt to the fund.

F4 Summary of Expected Results and Achievements:

Expected Results	Results Achieved (April 2000 – July 2005)
Reach at least 50 banks, non-bank specialized funds and capital market sources	142 resources consulted
Submit at least 24 Investment proposals to Financial Institutions	Total of 45 proposals were submitted to FIs: Brazil 9 El Salvador 2 Guatemala 9 Honduras 9 Nicaragua 6 Panama 2 South Africa 4 Tanzania 3 Zambia 1
At least 6 deals financed by financial institutions	23 enterprises received financing
Obtain at least US\$5 million of financial resources for renewable energy initiatives	Over US \$36 million disbursed for the implementation/construction of 23 renewable energy projects and enterprises.
Install at least 5MW of new renewable energy	<ul style="list-style-type: none"> - 20 MW of clean hydroelectric and biomass energy is being delivered to the local grid in Honduras (Snow Mountain, La Esperanza Phase 1A and B and Tres Valles) and Guatemala (Papeles) - 7.1 MW of new and clean energy will be delivered to the local grid in Honduras and Nicaragua - ~ 1,700 Solar Home Systems (SHS) in rural communities installed in Nicaragua (Tecnosol) and El Salvador (Tecnosolar) - 7 large scale and 1 small scale solar water heater units were installed in South Africa and Brazil by New Energies and Hidrosol - 13,150 solar home systems being installed in Guatemala, Nicaragua and Tanzania by Dintersa, Tecnosol and MONA. - 10 solar dryers being built and sold by Solar Moveis, 8 PV/irrigation units being installed by Village, 400 kilos of honey being produce on a monthly basis by Operarias do Mel in Brazil and 1

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	water pump being installed by Ascima in Brazil.
Develop a feasibility report for the creation of a patient capital fund	Feasibility report was developed
Draft a Concept Paper for the creation of a Brazilian Investment Fund	Draft completed
Secure at least US \$15 million for the creation of a Central American Fund	US \$15 million was secured plus a US \$5 million DCA guarantee from USAID.

TASK F5: DEVELOPING REGULATORY AND POLICY OPTIONS FOR RENEWABLE ENERGY PROJECTS

This task was focused on assessing barriers that impeded the implementation of renewable energy projects in Central America and recommending and promoting regulatory and policy options that encouraged the development of and investment in renewable energy enterprises. This task was implemented under the leadership of E+Co partner BUN-CA (Biomass Users Network of Central America).

FENERCA'S efforts in the policy arena in Central America had an important and positive impact, by opening a space for promoting renewable energy policy dialogue in the regulatory framework of the five targeted countries of El Salvador, Guatemala, Honduras, Nicaragua and Panama.

Based on the information gathered in the surveys developed by FENERCA (Task CA1 - Rapid Assessment and Final Work Plan Development), FENERCA team members undertook in-country missions and held around 90 meetings and interviews with over 60 national authorities and key stakeholder groups. As a result, the team was able to gather meaningful information regarding the policy context in Central America and the main policy barriers that impede the implementation of renewable energy projects in the region. With that information, the FENERCA team prepared a document on national and regional policy issues relevant to the promotion of renewable energy projects. This document has been complemented and reviewed by the national authorities on energy in five Central American countries. The document is called "Renewable Energy Promotion in Central America: Opportunities for Policy Intervention" (*Promoción de Energía Renovable en Centro América: Oportunidades para el Planteamiento de Políticas*).

The aim of this document has been to influence overall national policies towards the promotion of small-scale renewable energy projects, without pretending to change the existing legal frameworks in the short term. It contains a summary of the main policy barriers that impede the development of renewable energy projects in the region and some recommendations for their removal.

To date, regulatory entities and policy makers from the five participating FENERCA countries have launched legal and administrative processes and actions aimed towards the removal of 11 of the 20 barriers identified. Annex 9 includes the updated list of such policies and barriers.



In Honduras this policy work resulted in the structuring of specific projects and the subsequent approval of their power purchase agreements (PPAs) from the national electric utility. A total of 18 PPAs were approved in this country. FENERCA assisted 9 of these enterprises in the preparation of a business plan and 6 of them have reached financial closure and are either in operation or under construction (Cececapa 2.8 MW, Snow Mountain 484 kW, La Esperanza 13.5 MW, Yojoa 630 kW, Tres Valles

12.3 MW, and Cenit 520 kW)

Regional Energy Authority Meetings:

A total of three energy authority meetings were held in Central America. During these meetings, the energy directors discussed the major barriers to the development of renewable energy projects and identified concrete mechanisms to address these barriers so as to further develop and secure investment in renewable energy projects in the region. The meetings provided a unique opportunity to discuss current policy trends in Central America and to solicit input from the senior level representatives on potential barrier removals. As a result of this activity, local regulatory authorities strengthened the work they are currently undertaking in the energy field.



The meetings with the Central American regional authorities took place as follows:

- I. Regional Meeting held in Costa Rica on September 20, 2001. This meeting was funded by BUN-CA through the FOCER Program and included the participation of all National Energy Authorities in Central America.
- II. Regional Meeting held in Costa Rica on December 2nd, 2003
- III. Regional Meeting held in Honduras on February 24, 2005

Annex 10 includes the list with the 31 participants to these high level meetings.

Workshops with national authorities organized by FENERCA:

To achieve better support from local governments on the implementation of renewable energy projects, the FENERCA team organized 6 workshops with national authorities, with the participation of 243 government authorities.

- National Renewable Energy Workshop for Honduran Municipalities held in Honduras (December 3-5, 2002). Organized with support from the Direction of Energy of Honduras (DGE) and USAID-Honduras. 39 people from 17 different Municipalities and representatives from UNDP, ENEE, CABEL, NGOs and project developers participated in this event.
- National Seminar on Renewable Energy held in Honduras (January 21, 2004). This seminar was jointly organized with the Presidential Commission on Modernization of the State of Honduras. This event included participation of the Presidential Minister of Honduras, the Vice-president of CABEL and other national authorities. There were 66 participants from 12 officers from public agencies, 38 project developers, 10 representatives of financial institutions (local, regional and international), 6 representatives of NGOs, Bilateral and Multilateral Cooperation Agencies, and International Project Cooperation.
- 4 Workshops were held on Development of Capacities for Local and Communal Authorities in the Determination of Solutions for Off-grid Electrification targeted to municipalities. These workshops were organized in conjunction with



the ESMAP/GVEP program in Honduras in August 2004. There were 138 participants at the four workshops from 29 different municipalities.

Other Workshops:

FENERCA members participated as speakers in 6 other workshops at the country and regional levels, with participation of national authorities, municipal authorities, and others.

- On January 29 and 31, 2001, a FENERCA team member, María Engracia de Trinidad, participated in the National Workshop on the Formulation of Energy Policies in Nicaragua, organized by the National Commission of Energy (CNE), this event had 25 participants.
- On June 25, 2002, one member of the FENERCA team, Jose Maria Blanco, participated as a main speaker with a technical presentation on renewable energy business opportunities in a National Environmental Seminar held in Panama, organized by the ACP (Autoridad del Canal de Panama) and USAID, with 20 participants.

F5 Summary of Expected Results and Achievements:

Expected Results	Results Achieved (April 2000 – July 2005)
Maintenance of a continuous flow of communication with local and regional authorities to support the implementation of policy actions to contribute to the removal of financial barriers in Central America	Flow of communication with local and regional authorities in the energy policy environment was maintained. More than 90 meetings were held with different local and regional authorities in El Salvador, Guatemala, Honduras, Nicaragua and Panama, where over 60 national authorities were contacted.
To identify and annually update key policies and barriers that impede the implementation of renewable energy enterprises	Identified key policy barriers that exist for the implementation of RE projects in Central American countries and updated as necessary. List of key policies and barriers updated and published in the document " <i>Promocion de la Energia Renovable en America Central: Oportunidades para el Planteamiento de Politicas</i> ".
Development and update of the FENERCA authored document on "<i>Developing Regulatory and Policy Options for Renewable Energy projects in Central America</i>"	Three editions of the document were made with the objective to maintain the current legal and political context in each Central American country up to date.
Organization of a high-level meeting with energy authorities in Central America	Three Regional Energy Authorities Meetings were held in Central America with the participation of all energy authorities in the region.
Organization of a National Renewable Energy Workshop for policy members	6 workshops on renewable energy organized by FENERCA with the participation of 288 government officials and NGO

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	representatives. Attended 2 energy and environment workshops.
	Also assisted the Energy Commission of the Honduras Congress in drafting legislation on "Incentives for Renewable Energy projects". and, influenced the approval of 18 power purchase agreements (PPAs) from the electric utility in Honduras.

TASK F6: PROJECT MANAGEMENT, MONITORING AND EVALUATION

This task was composed of two activities (1) Program Management and (2) Monitoring and Evaluation. The objective of the **Program Management** activity was to provide hands-on, regular, detail-oriented and results-oriented management interaction among all the task leaders and program managers in order to ensure adequate and timely performance and reporting. The purpose of **Monitoring and Evaluation (M&E)** was to allow rigorous follow-up on activities, investments, business plans and enterprises supported through FENERCA during its first 3 years of implementation.

1. PROGRAM MANAGEMENT:

The FENERCA management team played an important role in the successful implementation of the program by designing work plans, tools to track results and implementing improvements as needed.

The task performance report was one of the tools developed to track the progress achieved under task F1 – F12 on a quarterly basis. It was used in conjunction with the work plans developed by FENERCA team members in each region. Periodic coordination and monitoring meetings were also held to track all program activities and to tackle areas of improvement as needed. The task performance report was posted on E+Co's global management system for easy access.

Throughout the program implementation, continuous coordination and integration of activities and working sessions for FENERCA team members were held. These sessions were vital for the success of the program and timely accomplishments of all deliverables according to the FENERCA work plan as well as to set course corrections when needed.

2. MONITORING AND EVALUATION

Two Central American enterprises supported during the first three years of implementation were assessed, monitored and evaluated. The purpose was to assess the value-added of the FENERCA intervention. The enterprises assessed were Tecnosol and Snow Mountain. These two enterprises were supported with Enterprise Development Services and Organizing Next stage financing (Tasks F1 and F4) by the FENERCA team since 2000 when the program started.

Enterprise	Country	Technology
Tecnosol	Nicaragua	PV
Snow Mountain	Honduras	Hydro

The assessments showed how FENERCA's intervention and support enabled these enterprises not only to obtain financing but also to implement successfully its businesses. Snow Mountain is delivering clean energy to the Honduran local grid and Tecnosol has installed numerous solar home systems in rural Nicaragua.

Enterprise Highlight:

Snow Mountain, a hydroelectric plant delivering clean energy to the local grid in Honduras

Snow Mountain is a 480 kW hydroelectric plant, fully operational and generating electricity for ENEE, the Honduras' state-owned utility. The project is located in the town of San José de Oriente, Municipality of Ilama, department of Santa Barbara. It has greatly contributed to the benefit of many of the 410 families that live in this community.

Positive social and environmental impacts include direct and indirect job creation, improvement in the town's quality of water and delivery of electricity to the local school. The project will offset the emission of approximately 20,000 Tons of CO2 during the next ten years.



The FENERCA program supported Snow Mountain with capacity building and enterprise development services for the preparation of its business plan and with the assessment and quantification of the project's carbon offset potential. This analysis led to a \$250,000 E+Co loan used to cover 60% of the total cost of the project. FENERCA's intervention in the policy arena was key to the approval of Snow Mountain's power purchase agreement (PPA), allowing the project to sell its electricity to the state-owned electric utility.

F6 Summary of Expected Results and Achievements:

Expected Results	Results Achieved (April 2000 – July 2005)
Development of quarterly progress reports for Task Managers	Quarterly Progress Reports were developed by task managers on a timely basis
Achievement of progress indicators and expected results	Achieved according to work plan
Budget Performance: Tracking and Analyses of Program Costs	On Track
Assess status and value of FENERCA program in 2 Central American Projects	2 enterprises were selected and assessed, one in Nicaragua and one Honduras

TASK F 7: MARKET OPENING IN NEW MARKETS

The objective of this task was to expand the FENERCA program into other markets in South America and Africa; the team evaluated and assessed different market options in the two regions, to be able to select the most appropriate ones. After extensive analysis Brazil, Ghana, South Africa, Tanzania and Zambia were selected as new markets to initiate expansion of the FENERCA program beyond Central America.

Some of the activities undertaken by this task were funded by the USAID climate change division.

South Africa

For the implementation of the FENERCA program in South Africa, the surveys developed for the implementation of the program in Central America in 2000, were translated and adapted for the South African market. The purpose of the surveys was to acquire a broader perspective and understanding of the policy and market barriers, training needs and project opportunities. From the surveys distributed, over 15 individuals and organizations responded. In addition to the surveys specific meetings were held with key stakeholders involved in the renewable energy sector. More than 45 stakeholders, including entrepreneurs and the local USAID mission in South Africa were consulted.

Brazil, Ghana and Tanzania

The FENERCA team leveraged from the BREED (Brazil Rural Energy Enterprise Development) and the AREED (Africa Rural Energy Enterprise Development) programs implemented by E+Co in Brazil, Ghana and Tanzania.

To launch the FENERCA program 3 market opening events were held as follows:

Country	Date	Participants	RE Participants
Brazil	November 21, 2002	Over 100	26 renewable energy entrepreneurs
Ghana	July 7, 2004	20	10 renewable energy entrepreneurs
Tanzania	July 28, 2004	25	15 renewable energy entrepreneurs

During the market opening workshops, the participants were walked through salient attributes of a winning business plan, how to gather facts and information for input into business plans and how the investor evaluates a business plan. Back to back with these events, one-on-one meetings were organized with prospective entrepreneurs and key stakeholders. Then further support to the selected enterprises was given through Task F1. Participants to the market opening events included entrepreneurs of small and medium energy enterprises as well as key stakeholders involved in the energy field such as cooperatives, financial institutions and governmental officials.

Enterprise Highlight:

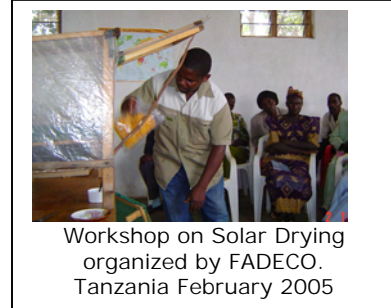
A SOLAR DRYER ENTERPRISE IN TANZANIA GENERATING INCOME FOR FARMERS

FADECO Trading Company Limited (FTC), is a 4-year old solar fruit drying company based in Tanzania. The company also assembles solar driers for sale to farmers and other food processing companies in Tanzania. FADECO is based in the Karagwe

District of the Kagera region in northwest Tanzania were farming is the dominant economic activity. FADECO supports more than 70 farmers in the Karagwe district, and reduces post-harvest losses by helping the farmers extend the shell life of their produce thus, generating an increase in income for these farmers.

FADECO plans to continue stimulating awareness in the use of solar driers among farmers and expand its solar drier construction and sales business. Also, when farmers engage in preliminary drying of their fruits, they can sell directly to the market or sell it to FADECO for further processing and packaging.

The FENERCA team supported FADECO with technical assistance for the development of a market study and assessment of additional market niches for this business, with the objective of guaranteeing FADECO's sustainability in the long run. FENERCA also sponsored 2 workshops on solar driers with a total participation of 60 farmers. A handbook on Solar Drying Technology was developed and, is available in Swahili, the native language spoken in the Karagwe district. FENERCA's support with next stage financing lead to a US\$25,500 E+Co investment in FADECO for the scale up its operations. These funds are being used to build commercial solar driers, improve its packing and processing equipment and source solar dryer materials.



F7 Summary of Expected Results and Achievements:

Expected Results	Results Achieved (April 2000 – July 2005)
Selection of 4 New Markets in South America and Africa	Brazil, Ghana, South Africa and Tanzania were selected as new markets
Organization of Market Opening events	3 Market Opening Events were held: Brazil: November 21, 2002 Ghana: July 7, 2004 Tanzania: July 28, 2004
Identification of at least 5 Energy Enterprises	63 renewable energy enterprises were identified: Brazil: 26 Ghana: 10 South Africa: 12 Tanzania: 15

TASK CA8: FACILITATION OF CARBON TRANSACTIONS

The objective of this task was to assess the five Central American targeted countries in terms of the demands and existing programs regarding carbon transactions to then to analyze five model projects in terms of their carbon potential.

This task was concluded on October 2001. However additional activities on the Climate Change front were then implemented through Task F9 with the support of the USAID Climate Change Division.

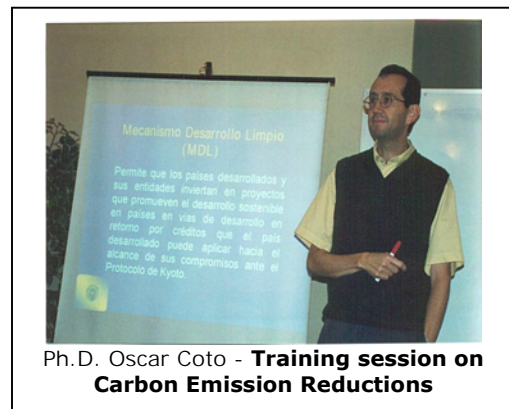
With the support of FENERCA's in-country representatives, during the program's first implementation phase, key information on the energy sector and the fuel mixes of the five target Central American countries was gathered. Based on this information, a specific approach was developed on how to calculate carbon emission reductions for renewable energy projects. This information was key to make renewable energy projects sponsors aware of the existing financing opportunities in the carbon sector.

The Carbon potential of a total of 7 enterprises was analyzed and 4 were presented to the Prototype Carbon Fund (PCF) for financial consideration:

1. Tecnosolar, a rural electrification PV company in El Salvador;
2. Papeles Elaborados, a small-hydro generation facility in Guatemala;
3. Eficontrol, an energy efficiency enterprise in Nicaragua; and;
4. Empresa Eléctrica del Norte, a bagasse-based co-generation project in El Salvador.

As part of the institutional strengthening activities undertaken by this task, FENERCA staff (from BUN-CA and E+Co) were trained on carbon emission reductions and provided with basic carbon calculation skills. The training built on the knowledge and expertise of Fundación Solar, a Guatemalan energy NGO. As a result of the meeting, the FENERCA team was able to standardize its carbon calculation approach and exceed the tasks' anticipated results by identifying and analyzing seven projects for carbon sale.

As a result of these efforts and in partnership with EcoSecurities, a leading carbon brokerage firm, E+Co was able to complete the first international green certificate transaction involving assets in a developing country. The transaction involved Hidroeléctrica Papeles Elaborados (HPE) a hydro electric project supported by FENERCA under Tasks CA3 and CA8 in Guatemala, and Nuon, the largest electricity distributor in the Netherlands. Nuon committed to purchase 100% of HPE's 8.2 MW carbon emissions for the next ten years. The carbon certificates will be used by Nuon as part of its green energy products. The transaction is one of the largest green certificate transactions to date.



CA8 Summary of Expected Results and Achievements:

Expected Results	Results Achieved (April 2000 – July 2005)
Analyze 5 model projects and prepare them to be examined by buyers	<p>A total of 7 projects were analyzed; - 4 projects prepared and submitted for Prototype Carbon Fund consideration. 2 of these projects also submitted to other potential carbon buyers. - 3 additional projects analyzed in June 2001.</p> <p>Preparation of first international transaction on carbon sale involving assets in a developing country. 8.2MW of carbon emissions sold to NUON.</p>
Prepare 100,000 tons of carbon for sale	<p>Projects submitted to PCF for consideration targeted 1,242,675 tons of CO2 equivalent.</p> <p>TOTAL of ~1.4 million prepared for sale.</p>
Prepare US\$500,000 of carbon for sale	<p>Total of US\$4.5 million prepared for sale</p>
Create a standardized worksheet to calculate carbon offsets per project.	<p>Completed</p>
Increase BUN-CA's capacity to implement carbon transactions	<p>In-country reps. involved in information gathering process to outline baseline data for each of the 5 countries. BUN-CA directly involved in developing specific formula to calculate carbon in RE projects and in analysis of projects for carbon sale.</p>

TASK F8: PRODUCTIVE USES

This task was designed to identify at least 5 enterprises that were developing businesses with productive use components powered by renewable energy. The objective was to have a clear understanding of the productive use application (also known as, income generating activities) and of how a business can be developed from those applications. The idea was that these activities could be replicated in other markets through profitable enterprises. For some of the selected applications, a handbook was developed with the purpose of serving as a training basis for the possible implementation of these applications in other markets. These handbooks are available in English, Spanish, Portuguese and Swahili.

Some of the opportunities identified included:

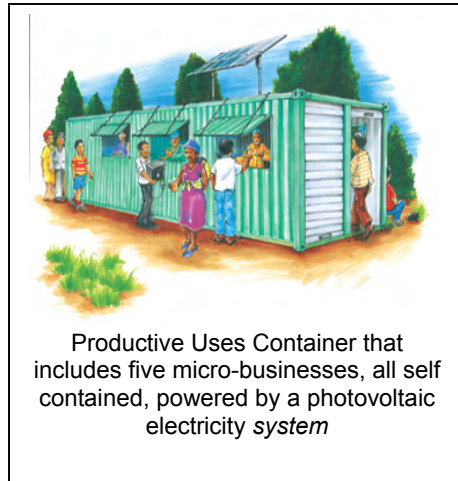
- Solar drying for food processing
- Solar thermal bakeries
- Solar PV powered community businesses
- Productive Uses Containers (PUC)
- Integrated mini-grid

A total of 9 enterprises with productive use applications have been supported by FENERCA in Brazil, El Salvador, Nicaragua, Tanzania and Zambia as follows:

Village: a Brazilian enterprise that distributes, sells, installs and provides maintenance to photovoltaic, micro hydro, small wind, and biomass systems. With FENERCA's support, Village developed a biodigester kit focused on irrigation for the small farmer. The motor runs on biogas and the organic fertilizer produced is injected into the irrigation hoses, so an irrigation kit with zero energy and zero fertilizer costs is created.

The biodigester was installed on November 2004 in a farm in Cuiabá. The farmer with Village's assistance tested the biodigester for a couple of weeks, some adjustments in terms of technology were made to the system and it is being tested one more time. A biodigester manual has been developed and is available in English, Portuguese and Spanish. Copies in Spanish and Portuguese are available for distribution in Brazil and Central America.

TSADC: The TTT South African Development Company is a Zambian company that was seeking to establish financially viable bakeries utilizing solar energy, to produce fresh wheat products for sale to local communities. On 2003, E+Co provided a US \$ 20,000 dollar-loan to TSADC to develop a pilot project that consisted on setting up a bakery. The original idea was to first, develop and test a financially viable business model for rural bakeries using the Villager Sun Oven (a proven form of solar cooking) and then, to implement a large-scale replication of these models to other rural sites in Zambia. During the testing period, TSADC encounter several technical difficulties as well as the



realization that on cloudy and foggy days the solar ovens wouldn't be operational. As a result of this the enterprise did not succeed. A preliminary assessment of the difficulties of the solar bakery system and a report on lessons learned was developed with the purpose of documenting the experience.

FADECO: is a Tanzanian company dedicated to the construction and sale of solar dryers, as well as to the dehydration of fruits, particularly banana and pineapple, utilizing solar dryers. Sale of driers currently constitutes 15% of its total revenue with the rest coming from the sales of dried fruits. FADECO supports 100 farmers and their families on the nearby communities, of the Karagwe district. FADECO plans to continue stimulating awareness in the use of solar driers among farmers and grow its solar drier construction and sales business. Farmers engaged in preliminary drying of their fruits can sell directly to the market or sell it to FADECO for further processing and packaging.



The FENERCA team supported FADECO with technical assistance, for the development of a market study and to assess additional niches for this business with the objective of guaranteeing FADECO's sustainability in the long run. Two workshops on solar dryers were organized by E+Co and FADECO. A total of 60 farmers participated in the workshops on February 1st and 2nd 2005. A handbook on Solar Drying Technology was developed in conjunction with Solar Moveis, a Brazilian enterprise. This handbook is available in Swahili, the native language spoken in the Karagwe district, were FADECO is located in Tanzania, and it is also available in Spanish and Portuguese for its distribution in Central America and Brazil.

Solar Moveis is a Brazilian enterprise that has been operating in the furniture business for about 15 years and is incorporating solar dryers into their business. The company obtained a US \$ 18,000 loan form E+Co to install equipment to manufacture and commercialize a low-cost highly efficient solar food dryer that can dry fruits, vegetables, grains and meat. On March 5th 2004 a solar dryer workshop was held were more than 44 people participated from local communities. This enterprise helped FENERCA with the development of a manual on Solar Drying.





AMEC: is a Nicaraguan company that produces and sells wind water pumping systems. AMEC expects to prove the replicability potential of the water pumping system in other markets and to transfer its technology from one country to another (Nicaragua to El Salvador). A demonstration system has been installed in the Jocoro community, in a rural area in El Salvador, where a potential market of 100 farmers was identified. The water pumping system was installed in the Jocoro Farm. The Jocoro Farm is a small farm owned by a

woman entrepreneur who among other activities, produces and sells cheese and, raises pigs.

The wind water pumping system was installed on October 2004 to pump water for the production of cheese and for the pigs. Once the system installed and tested for over a month a workshop was held on the Jocoro Farm on December 1st 2004. 25 people participated on the workshop, including the Jocoro major and 13 farmers. A wind water pumping manual was developed and is available in Spanish for distribution.

F8 Summary of Expected Results and Achievements:

Expected Results	Results Achieved (April 2002 – July 2005)
Identification and Selection of at least 6 productive use (PU) applications in Africa, Brazil and Central America	6 enterprises with productive use applications were selected and are being supported
If needed, provision of EDS to 2-3 enterprises with PU applications using renewable energy	EDS was provided to 9 enterprises with productive use applications. 4 business plans with productive use applications were completed in Brazil, El Salvador, Nicaragua, Tanzania and Zambia.
Development of at least 3 handbooks on viable PU Income Generating applications	4 PU manuals were developed on biodigestors, PV solar dryers, wind water pumping and PV solar refrigeration . 3 enterprises (AMEC, FADECO, and Solar Moveis) provided training to potential users/buyers of the PU systems.
If needed, testing of productive use application	2 productive use applications were tested in El Salvador (water pumping) and Brazil (biodigestor) 2 enterprises (Village and AMEC) have implemented pilot programs to test the PU systems in Brazil and El Salvador.

TASK CA9: SUPPORT AND CAPACITY BUILDING OF BUN-CA

The main objective of this task was to strengthen the capacity of BUN-CA (Biomass Users Network of Central America), E+Co's local partner in Central America for the implementation of FENERCA by, enhancing their ability to provide enterprise development services and business plan preparation support to renewable energy entrepreneurs as well as, develop a long term strategic work plan leading to a sustainable business plan for their organization.

Even though this task was officially concluded on October 2001, E+Co continued supporting BUN-CA's capacity throughout the implementation of the program and substantial efforts were undertaken to strengthen BUN-CA's capacity to plan, organize and implement renewable energy initiatives that are sustainable throughout the Central American region. This partnership was considered the basis for the success of all activities and tasks undertaken in Central America. It is also important to highlight that all expected work was completed and achieved on time, exceeding by far all anticipated outcomes.

With the tools and information received through the different FENERCA training activities and its involvement in program-related activities on-the ground, BUN-CA produced a detailed organizational and programmatic Business Plan that includes a long-term strategic work plan. The development of this document provided an opportunity to establish a more sustainable approach to the organization's activities in all the countries and at its headquarters in Costa Rica. As a result, BUN-CA has a more stable and defined technical and administrative professional structure and has improved its infrastructure.

One of the major results of Task CA9 was the strengthening of BUN-CA's network on a regional basis. As a consequence, BUN-CA staff has already started to provide support to in-country representatives and local entrepreneurs in business plan preparation, increasing the local renewable energy deal flow in the region, and assisting policy makers to integrate renewable energy in the policy arena.

BUN-CA maintained in all the Central America countries close links with more than 40 professionals and 20 NGOs engaged in renewable energy and contacts with other organizations or initiatives related to energy project financing, such as the Central



Training Workshop on PV
Guatemala, June 19-20, 2001

American Network for Gender and Energy and Fundación Solar in Guatemala; The Central American Bank for Economic Integration and Adesol in Honduras; The Central American Commission on the Environment and Development in El Salvador; The Natura Foundation in Panama; and The Energy and Climate Change Program for Latin America and the Caribbean of the UNDP, Costa Rica and its local Missions among others.

A total of 919 person-hours of training were received by BUN-CA staff under FENERCA, as shown in the following table.

Table 6 - Person-hours of training received by BUN-CA to October 18, 2001

Activity	Participants of BUN-CA	Hours by person	Total hours
Technical missions in Costa Rica and El Salvador	17	8	136
Financial Engineering Workshop held in Honduras	3	8	24
Hands-on training on Manuals of BP, XC1, XC2, XC3	9	15	135
Financial Engineering Workshops held in Guatemala	10	16	160
RE Seminar held in Panama	3	8	24
Financial Engineering Workshops held in Honduras	3	8	24
Financial Engineering Workshops held in Panama	3	16	48
Financial Engineering Workshops held in Nicaragua	3	16	48
Financial Engineering Workshops held in El Salvador	3	16	48
Workshop on maintenance and installation of PV Systems held in Guatemala	2	24	48
Production and installation of Solar Water Heater Systems held in Belize	2	40	80
Workshop on Carbon (MDL and others) held in CR	7	8	56
Technical meeting with E+Co – Costa Rica	4	8	32
Installation of Photovoltaic Systems held in El Salvador	2	16	32
Central American Energy Directors Meeting held in Costa Rica	3	8	24
TOTAL PERSON-HOURS OF TRAINING			919

As part of the trainings on the energy arena and strengthening of the professional capacities of BUN-CA's representatives, to date, 2 BUN-CA representatives are currently assuming important positions at the government level in Guatemala and Honduras \ (Jorge Galindo – National Energy Director in Guatemala and Patricia Panting – Minister of Natural Resources and Environment –SERNA in Honduras).



Mrs. Patricia Panting, Minister of SERNA, at the National Renewable Energy Workshop for Municipalities Honduras, 2002

CA9 Summary of Expected Results and Achievements:

Expected Results	Results Achieved (April 2000 –July 2005)
5 NGOs actively working in each country instituted as part of BUN's network	El Salvador: 3 Guatemala: 2 Honduras: 2 Nicaragua: 3 Panama: 4 TOTAL: 14
10 new professional contacts	35 new professional contacts established
Essential training received by BUN-CA	A total of 919 person hours of training have been provided to BUN-CA's personnel

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	throughout FENERCA.
Development of BUN-CA's organizational business plan	Completed and delivered October 2001. (Annex 5).
US\$54,000 of working capital to strengthen BUN's capacity to continue activities and retain professionals	US\$54,000 disbursed in January 2001. 5 in-country representatives retained in each of FENERCA's target countries.

TASK F9: CLIMATE CHANGE

Activities implemented under this task were funded by the USAID Climate Change Division. The climate change division started supporting the FENERCA program in 2002 with the objective of promoting clean energy. Overall activities under this task included:

1. Provision of enterprise development services and assessment of the potential carbon savings of clean energy enterprises including enterprises that were incorporating productive use applications in their enterprise initiatives.
2. Support to entrepreneurs in Brazil that were incorporating productive uses applications.
3. Development of a pipeline and support to energy efficiency enterprises in Central America.
4. Support to two local NGO partners in Brazil.

Enterprise Development Services – Renewable Energy

E+Co provided Enterprise Development Services -EDS, including financial structuring, business plan development and assessment of their potential carbon savings to 17 entrepreneurs developing small and medium size renewable energy projects in Brazil, Guatemala and Honduras. As a result of the EDS, eleven carbon assessments were prepared.

The table below lists the 11 enterprises evaluated for carbon savings:

Enterprise	Country	Technology
EcoInvest	Brazil	Wind
Eco Mapua	Brazil	Biomass
Fazenda	Brazil	Hydro
Pindorama	Brazil	Co-generation
Nova Gerar	Brazil	Biogas
Jones	Guatemala	Hydro
Ixpil	Guatemala	Hydro
El Ocostio	Guatemala	Hydro
Rio Lindo	Honduras	Hydro
La Esperanza	Honduras	Hydro
El Cisne	Honduras	Hydro

Enterprise Development Services - Energy Efficiency

The purpose of this activity was to provide enterprise development services to entrepreneurs developing energy efficiency businesses in Central America. E+Co leveraged funds from the UNDP/GEF Energy Efficiency program implemented by BUN-CA, E+Co's partner for the implementation of this activity.

First of all, to determine the critical sectors of electrical consumption, to acquire a better understating of the energy efficiency market and to identify energy efficiency opportunities, surveys were distributed and mission trips were held throughout Central America. During the mission trips, the team met with the "Cleaner Production Centers"(Centros de production mas limpia¹) in each country. These centers support the

¹ The Cleaner Production Centers are part of a worldwide initiative of the United Nations Industrial Development Organization (UNIDO).

government and industrial sector on clean energy activities. The team also had meetings with the political authorities from the energy sector in each country (such as ANAM in Panama and CNE in Nicaragua) and with the private sector such as “Eficontrol” and “Ecamí” in Nicaragua and Union Fenosa in Panama.

As a result of these meetings and the 114 responses received from the surveys, the FENERCA team created an Energy Efficiency pipeline with 15 business opportunities

From the Energy Efficiency pipeline developed, three opportunities received Enterprise Development Services – EDS and completed an investment plan. EDS included support in assistance on specific technical applications to energy efficiency; financial assistance and development of an investment plan for presentation to financial institutions for financing consideration.

Energy efficiency enterprises supported:

Project Developer	Country
Multiconsult	Nicaragua
CTII	Honduras
Centro de Producción mas Limpia	Panama

Carbon Manual Update

E+Co’s Carbon Manual developed under the USAID/FENERCA contract in 2001 was updated to reflect current international trends and activities. The carbon manual is currently available in three languages (English, Spanish and Portuguese) in both printed and electronic versions. The Carbon Manual has been distributed among renewable energy entrepreneurs and NGO’s in the targeted countries.

Strengthen the capacity of local Brazilian NGO partner IDER

In Brazil, E+Co partnered with IEE - Instituto Eco Engenho and IDER - Instituto de Desenvolvimento Sustentável e Energias to transfer its technique of providing enterprise development services to clean energy entrepreneurs.

E+Co’s team held over 8 formal capacity building sessions with IEE and IDER. The topics reviewed during those sessions included:

- Enterprise identification
- Business plan development
- Enterprise development services
- Financial modeling
- Due diligence

F9 Summary of Expected Results and Achievements:

Expected Results	Results Achieved (April 2002 – March 2005)
Provision of EDS and Carbon Savings Assessment to 10 projects in Brazil and Central America	EDS was provided to 17 enterprises and 11 Carbon Saving Assessments were completed.
Update to the Carbon manual developed on 2001, translated, printed and distributed in English, Portuguese and Spanish	Carbon manual available in English, Spanish and Portuguese (printed and electronic versions) were distributed
Know –how sharing to Brazilian local partner IDER	A total of 12 working sessions were organized with E+Co Local partners IEE and IDER
Development of a Energy Efficiency (EE) pipeline in Central America	An Energy Efficiency pipeline with 15 opportunities was developed
2-3 EE entrepreneurs receiving EDS (Enterprise Development Services)	3 Energy Efficiency enterprises received EDS in Honduras, Nicaragua and Panama
1-2 EE investment plans developed	3 EE investment plans were completed

TASK F10: BUSINESS DEVELOPMENT SUPPORT

This task was created for FENERCA's second implementation phase on October 2001 with the objective of securing in-country USAID local missions support (either in kind or in the form of funding) to ensure long-term program and project sustainability.

Throughout the 5 years of FENERCA's implementation, continuous contact was maintained through meetings with representatives from the USAID local missions in the ten targeted countries. During those meetings, the program's objectives, work plan and achievements were presented.

The FENERCA team worked hard in identifying areas of mutual collaboration to take advantage of important synergies between the FENERCA program and the local USAID Missions since both were active in promoting broad economic growth, social development and creating new job opportunities. The local USAID Missions were very supportive with the FENERCA team in terms of listening to our accomplishments, providing useful information for the development of the program and participating in some of the events organized by FENERCA. However, no monetary support was secured from them.

Members of the FENERCA team had over 35 meetings and or conference calls with USAID officials from the local Missions.

Participation of FENERCA in USAID events:

Members of the FENERCA team participated in 10 events organized by the USAID local Missions:

- Gavin Watson, E+Co's investment officer in Africa, participated on the USAID South African partners meeting Oct 2004.
- In February 2004 a Representative from the E+Co Africa office participated in the USAID South Africa Partners Workshop. The purpose of the workshop was to assist partners with reporting requirements and meet other partners.
- On July 13 and 14, 2004, Ms. Kattia Quiros from BUN-CA participated in a workshop held in Panama and organized by PROARCA related to Cleaner Production Centers and identified some potential energy efficiency projects.
- Participation of Leonel Umaña from BUN-CA in the CDM Workshop held in Antigua, Guatemala from April 7-11, 2003. This workshop was organized by the Center for Sustainable Development of America (CSDA) and financed by USAID/EGAT. This event included the participation of 40 people from Central American Countries including project developers, CO₂ buyers, Berkeley Laboratory, staff of USAID and other stakeholders.
- Participation in the Bi-national Workshop on Gender and Energy organized by Genes with the support of the USAID (April 29 – May 3, 2002). The workshop was held in Costa Rica and brought together 22 participants from Costa Rica and Panama.
- Participation in a conference organized by USAID and the Authority of the Panama Canal (ACP - Autoridad del Canal de Panama) on June 2002. A



Participants in the **Workshop on Gender and Energy** held in El Salvador in 2002

presentation was given by FENERCA members on “Renewable Energy Business Opportunities”.

- Participation in a workshop organized by Genes on “Gender and Energy” through Winrock International and with the support of USAID (July 10, 2002). The workshop was held in El Salvador and brought together 25 participants from El Salvador, Guatemala, and Mexico. The participation of FENERCA in the event was key to its success where the participants benefited from the experiences on the renewable energy field.
- Participation on the “XVII Meeting with Municipalities” organized by FUNDEMUN with the support of USAID local Mission in Honduras (July 18 and 19, 2002). Forty-four municipalities participated in this event. The local Mission in Honduras believes that it is important to strength the municipalities in order to improve living conditions and economic growth and FENERCA has an important role in building the capacity of the municipalities in the field of energy. As a result of such participation, the FENERCA team coordinated with the USAID local Mission and SERNA (Secretariat of Energy in Honduras) the organization of a workshop on renewable energy for about 10 municipalities. The selection of such municipalities was made based on those that have poor access to energy services and can be most benefited by the development of renewable energy enterprises in their municipalities (this efforts were also mentioned on Task CA 7).
- On November 2002, a member from the FENERCA team participated in USAID – Brazil’s Annual Meeting. This meeting included many renewable energy stakeholders in Brazil and was a good opportunity for networking and sharing experiences. In addition to that, USAID Brazil’s energy director, Alexandre Mancuso, participated in FENERCA’s market opening event in Brazil on November 21, 2002.
- Two representatives from E+Co participated on February 28, 2003 on the Rural Team Partners Meeting organized by USAID EGAT/EIT in Washington.

Participation of USAID officials in FENERCA activities:

Officials from the local USAID Missions have participated in the following events organized by FENERCA:

- Mr. Cleveland O Thomas, USAID official from the Ghanaian local mission participated in FENERCA’s global meeting organized in Accra, Ghana on October 2004 (Task F11 Global FENERCA)
- Mr. Nkosiphambili Ndlovu from South Africa participated on the Renewable Energy conference organized by E+Co in Centurion on July 1st, 2004
- On April 2004, Mr. Alexandre Mancuso from the Brazilian USAID Mission participated on E+Co’s “Power Future” event
- Mr. Cleveland O Thomas and Mr. Thomas Mc Andrews participated in FENERCA market opening events in Ghana and Tanzania in July 2004
- Mr. Alexandre Mancuso USAID’s energy director from the local Mission in Brazil participated in a regional seminar organized by E+Co and World



Participants in the **II Regional Meeting of Central America Energy Authorities**, Costa Rica, **December 2nd, 2003**

Vision in Recife on “Financial Services and Alternative Technologies and Solitary Commerce as Promoters of Development”

- On December 2, 2003, Mrs. Zoyla Letona from Energy and Infrastructure Department, USAID Mission-Guatemala, and Deborah Ley, from Sandia National Labs, participated in the *Second Energy Authorities Meeting of Central America* held in Costa Rica.
- On November 8, 2000, a *Small-Scale Renewable Energy Workshop* was organized in Panama jointly with the FOCER Program. It had 52 participants from 34 institutions, among them NGOs, private companies, cooperating agencies, the public sector, universities and 3 officers from USAID-Panama, and 7 officers from 6 financial institutions. This workshop was inaugurated by Mrs. Lee Roussel, Chief of the Sustainable Development Unit from the USAID-Panama Mission. The other officers present were: Felipe Frederick, Project Coordinator; and Lars Klassen, General Chief of the USAID-Panama Mission.
- On September 20, 2001, Mrs. Zoyla Letona from the Energy and Infrastructure Department, USAID Mission-Guatemala, participated in the *First Energy Authorities Meeting of Central America* held in Costa Rica.

Support provided by USAID local Missions

Local USAID Missions provided the following support to FENERCA:

- The regional Mission of Central America based in Guatemala provided important information to make additional contacts in the region.
- The USAID Missions in El Salvador and Panama promised to establish some contacts with local NGOs working on the renewable energy field.
- Honduran Local USAID Mission have been key on the organization of an event that was held on December 2002 with the participation of 23 municipalities in Honduras. FENERCA and the Secretary on Natural Resources and Environment - SERNA –organized the event (Task 5).

F10 Summary of Expected Results and Achievements:

Expected Results	Results Achieved (April 2000 – July 2005)
Hold at least 20 meetings with local USAID missions on the ten targeted countries	Over 35 Meetings were held with USAID representatives in Brazil, Ghana, Guatemala, El Salvador, Honduras, Nicaragua, Panama, South Africa, Tanzania and Zambia
As possible, secure support form local USAID missions	E+Co undertook continuous assessment of potential collaboration opportunities

TASK F 11: GLOBAL FENERCA – BEST PRACTICE DOCUMENTATION AND SHARING

This task had two components: one that focused on bringing together the full FENERCA team for two annual meetings and the other one focused on the development and implementation of a Global Management System for cross platform learning.

Capacity Building for the FENERCA team:



Luis Fernando Merida and FENERCA team – **Field visit to La Laguna project**

The first Global FENERCA meeting was held in Guatemala, a FENERCA country, from April 7-10, 2002. As the FENERCA program started to expand into new markets beyond Central America, the meeting served as an opportunity to share the experiences and tools utilized in Central America for the design and implementation of the program in the new markets in South America and Africa. The meeting was a success with 23 staff members participating, including members from BUN-CA, E+Co's partner in Central America.

The meeting was a great opportunity for information sharing across all regions (Africa, Asia, Central America and South America). Experiences were discussed and analyzed; including similarities and differences. Also specific enterprise-models from different countries were discussed. During the meeting the team was able to standardize E+Co's investment process across regions, which will facilitate and accelerate the investment process for those enterprises that are seeking financing from E+Co.

A field trip was held to La Laguna, a FENERCA supported enterprise since 2002. La Laguna is a geothermal plant that dehydrates fruits. The project was selected for its uniqueness and productive use application.

The second Global FENERCA meeting was held in Accra, Ghana, a FENERCA country, from October 22 – 26 2004. The meeting was a success with twenty E+Co staff members participating, one E+Co board member, two members from KITE, E+Co's local partner organization in Ghana and Mr. Cleveland O Thomas, representative from the USAID local mission in Ghana.

During the meeting a panel was held with the participation of three different entrepreneurs supported by E+Co, including Biogas Engineering, a current enterprise supported through FENERCA.



FENERCA Second Global Meeting
Ghana- October 22-26 2004

Global Management System:

E+Co, with USAID support developed a Global Management System - Web-Based Database. The global management system connects E+Co's offices in Brazil, Bolivia, China, Costa Rica, South Africa, Thailand, The Netherlands and the United States by providing up-to date information on enterprises, investments, funders and E+Co

operations. With E+Co actively involved in over 30 countries, an internet based communication system is the only effective communication tool. Currently, the Global Management System is operational.

All information about E+Co's enterprises and investments is available via the Global Management System, including progress reports. Establishing E+Co's Monitoring and Evaluation program on the Global Management System promotes experience sharing across regions. Sharing lessons learned is critical to transferring technology and techniques from one enterprise to another and from one country to another. Having current information available on every enterprise allows for improved enterprise development services and timely course corrections. Also a multi lingual, multicurrency web based loan servicing system was designed and is being implemented as part of the global management system. The system was tailored designed to the growing demands of E+Co and its continuing efforts to demonstrate the commercial viability of renewable energy investments.

A Users Guide for the Global Management System was developed for all new staff and users to the system.

F11 Summary of Expected Results and Achievements:

Expected Results	Results Achieved (April 2000 – July 2005)
Cross Platform learning of renewable energy enterprise development experiences and development of online enterprise management tools	<ul style="list-style-type: none"> - A Global Management System was developed for assistance in cross platform learning - Design and implementation of a multilingual and multicurrency loan servicing system
Capacity Building for FENERCA team	<p>First Global FENERCA team meeting was held from April 7-10 in Guatemala with the participation of 23 team members.</p> <p>Second FENERCA global meeting was held from October 22-26, 2004 with the participation of 24 people, including a USAID representative from Ghana and 3 entrepreneurs</p>
Specific menu and work plan for business planning, documentation, management and analysis improvements	Discussed during the Global FENERCA meeting

TASK F 12: MANUAL DEVELOPMENT AND MANUAL IMPROVEMENT (IT INCLUDES TASK XC1, XC2, XC3 AND XC3A DEVELOPMENT OF RENEWABLE ENERGY MANUALS)

The objective of this task was to develop and disseminate manuals that complemented the program’s activities on completion of business plans, carbon, productive use applications, policy measures and, monitoring and evaluation of investments.

The Team worked on designing, updating, printing and distributing several renewable energy manuals to facilitate the provision of enterprise development services.

The manuals and documents developed by FENERCA were the following:

#	Manual/Document	English	Spanish	Portuguese	Swahili
1	Off-Grid Services		x	x	
2	Carbon Manual	x	x	x	
3	Energy Entrepreneur’s Toolkit	x	x	x	
4	Energy Entrepreneur’s Toolkit for Grid-Connected Projects		x		
5	Financing Hydroelectric Projects		x		
6	Productive Uses	x		x	
7	Monitoring and Evaluation	x	x	x	
8	Solar Dryer Manual	x	x	x	x
9	Wind Water Pumping	x	x		
10	Biodigestor	x	x	x	
11	PV and Refrigeration	x	x		
12	Developing Regulatory and Policy Options for Renewable Energy Projects in Central America”		x		

Description of the Manuals developed by FENERCA

- The **Off-Grid Services Manual** is a step by step guide on how to appraise the technical and market feasibility of an off-grid renewable energy project. ~ 400 Spanish copies were distributed amongst project entrepreneurs and key stakeholder groups throughout the Central America region and ~ 200 Portuguese copies were distributed in Brazil
- The **Carbon Manual** provides a carbon calculation instrument to appraise emission reductions linked to renewable energy projects. The carbon calculator addresses the specific fuel mixes of FENERCA’s targeted countries in Brazil, El Salvador, Guatemala, Honduras, Nicaragua, Panama and South Africa. A first version of this manual was developed in 2001 and then disseminated throughout the Central American Market. Given constant changes on the market and the extension of the FENERCA program into new markets, a new version was developed in 2002. 350 Spanish copies were distributed in Central America, 150 Portuguese copies were distributed in Brazil and 50 English copies were distributed in Africa and the US amongst project entrepreneurs and key stakeholder groups.
- The **Energy Entrepreneur’s Toolkit** is a step by step guide to turning a clean energy business idea into a reality and to prepare its business plan. This manual was

developed in 2,000 with the support of USAID through the FENERCA program and the UNF/AREED (African Rural Energy Enterprise) program. About 530 copies have been distributed. 300 Spanish copies, 180 Portuguese copies and 50 English copies have been distributed in all ten FENERCA targeted countries.

- **The Energy Entrepreneur's Toolkit for Grid-Connected Projects** is an additional version of the Energy Entrepreneur's Toolkit but targeted specifically to grid-connected projects. This version was utilized and disseminated in a regional seminar held in Honduras in May 2003 to entrepreneurs that have been supported through FENERCA in Central America. Additional copies have been also distributed to other entrepreneurs developing grid-connected projects. Approximately 60 Spanish copies of this manual have been distributed throughout Central America.
- **A Manual on Financing Hydroelectric Projects** targeted to financiers was developed on 2002 as a training tool for Central America. 60 copies have been distributed in El Salvador, Guatemala, Honduras, Nicaragua and Panama.
- **A Productive Uses Manual** was developed during 2002 and focuses on income generating activities incorporating clean energy technologies. 60 Portuguese copies of this manual have been distributed in Brazil as part of training sessions organized by E+Co.
- **A Monitoring and Evaluation Manual** for clean energy entrepreneurs was developed. English, Spanish and Portuguese copies of this manual are available and to date 200 copies have been distributed.
- **A Solar Dryer Manual** was developed as a result of the productive use activities in Tanzania and Brazil. This manual focuses on the solar drier business and on the manipulation of produce to be dried. This manual was developed with assistance from Mr. Pedro Luis Meloni, a Brazilian Agricultural Engineer, expert on dehydrating fruits and vegetables, Mr. Flávio Fernando, owner of the Brazilian enterprise Solar Moveis and Mr. Sekiku Joseph owner of the Tanzanian enterprise FADECO - Trading Company Limited. 600 copies in Spanish, Portuguese and Swahili (200 copies in each language) have been printed and are currently being distributed in Central America, Brazil and Tanzania.
- The **Wind Water Pumping Manual** shows a general vision on how to incorporate the main productive use applications of the wind water pumping. 200 copies in Spanish have been produced and are being distributed in Brazil and Central America.
- **A Biodigestor Manual** based on a model designed by a Brazilian entrepreneur was developed. This manual provides general information on the biodigestor, its uses and applications. 500 copies have been produced (300 Portuguese and 200 Spanish) and are being distributed in Brazil and Central America.
- **A PV and Refrigeration Manual** targeted for small-solar energy entrepreneurs and end-users was developed. This manual provides information on the technical aspects and productive use applications of the solar refrigeration; it also shows experiences of supported enterprises by E+Co and its partner BUN-Ca in Central

America and Brazil. 100 copies have been developed and are being distributed in Central America.

- A **Policy Document** on Developing Regulatory and Policy Options for Renewable Energy Projects in Central America” has been developed. Three versions of this manual were developed. A total of 250 Spanish copies have been distributed in Central America among policy stakeholders, NGO’s and entrepreneurs.

The following table shows the distribution list of the manuals that have been disseminated and or are in the process of being distributed:

Table 7 – Distribution list of manuals

	Spanish	Portuguese	English	Swahili
OFF-GRID SERVICES MANUAL	400	200	-	-
CARBON MANUAL	350	150	50	-
ENERGY ENTREPRENEUR’S TOOLKIT	300	180	50	-
EE TOOLKIT FOR GRID-CONNECTED PROJECTS	60	-	-	-
MANUAL ON FINANCING HYDROELECTRIC PROJECTS	60	-	-	-
PRODUCTIVE USES MANUAL	-	60	-	-
MONITORING AND EVALUATION MANUAL	100	50	50	-
SOLAR DRYER MANUAL	200	200	200	200
WIND WATER PUMPING MANUAL	200	-	-	-
BIODIGESTOR MANUAL	200	300	-	-
PV AND REFRIGERATION MANUAL	100	-	-	-
POLICY DOCUMENT	250	-	-	-
	2,220	1,140	350	200

F12 Summary of Expected Results and Achievements:

Expected Results	Results Achieved (April 2000 – July 2005)
Development of an off-grid manual	Developed and distributed
Development of a carbon manual	Two versions of a Carbon Manual were developed and distributed
Development of a M&E manual	Developed and being distributed
Development of a policy document	Document on “Developing Regulatory and Policy Options for Renewable Energy Projects in Central America” was developed, updated and distributed
Development of an energy entrepreneur’s toolkit	Energy entrepreneur’s toolkit and Energy entrepreneur’s toolkit for grid-connected projects was developed and disseminated
Development of a productive uses manual	Productive Uses Manual developed and distributed
Distribution of 2 productive uses manuals (Task F8)	4 Productive Uses Manuals were Developed: - Manual on Solar Dryers - Wind Water Pumping Manual - Biodigestor Manual - PV Manual Being printed in English and Portuguese
Development of additional manuals as needed	In addition to the expected results a manual on Financing hydroelectric projects was developed
Dissemination of manuals	Over 3,900 copies of manuals were distributed
Translations as needed	Manuals translated and currently available in Spanish, Portuguese, English and Swahili

BUDGETARY ISSUES

The FENERCA team was able to advance and in many instances exceed all the anticipated work within the project budget, both in terms of staff time and also in regards to expenses.

Annex 11 shows the financial performance report of the program. As it is highlighted on the financial report, as of June 30, 2005, E+Co has satisfied and exceeded its committed cost share amount for the FENERCA program. Total E+Co cost share amounts to US \$1,970,995, of which, US \$1,925,995 was in the form of Seed Capital for FENERCA sponsored projects and US \$45,000 in in-kind services. An additional US \$243,240 will be disbursed in another 3 FENERCA supported enterprises (RESCO US \$63,240; REX US \$153,000 and FADECO US \$27,000) by year end.

LIST OF ANNEXES

The following is a list of the annexes included as part of this report:

- Annex 1: Sample Surveys for Entrepreneurs, NGO's and Financial Institutions.
- Annex 2: List of Enterprises Supported by FENERCA and Status
- Annex 3: List of Business Plans Completed.
- Annex 4: List of Training Sessions for Financial Institutions and Participants.
- Annex 5: Projects Presented to Financial Institutions for Investment
- Annex 6: CAREC's Marketing Brochure
- Annex 7: CAREC's Pipeline
- Annex 8: CAREC's Investment Brochure
- Annex 9: List of Policy Barriers
- Annex 10: Participants to the Regional Meetings with the Energy Authorities
- Annex 11: Financial Performance Report

ANNEX 1:

Sample Surveys for Entrepreneurs, NGO's and Financial Institutions

6. ¿En qué fase está el proyecto?

1 Idea 2 Pre-Factibilidad 3 Factibilidad 4 Pre-inversión 5 Inversión

7. ¿Cuál es el costo total (estimado) del proyecto (en US\$) ? _____

8. ¿Qué porcentaje de este costo sería financiado por la empresa?

1 0 – 20% 2 20 – 40% 3 40 – 60% 4 60 – 80% 5 80 – 100%

9. ¿Ha identificado alguna fuente de co-financiamiento? 1 Si 2 No (PASE A PREGUNTA)

FAVOR INDICAR TIPO DE FUENTE, MONTO Y ESTADO ACTUAL DE LA NEGOCIACIÓN
--

TIPO DE FUENTE	MONTO DEL CO-FINANCIAMIENTO	ESTADO ACTUAL (Asegurada o negociando)
BANCO:		
ONG:		
OTRA ENTIDAD:		

10. ¿Existen suplidores locales o en Centro América de la tecnología requerida por el proyecto?

1 Si. 2 No

11. ¿Cuáles serían los beneficios ambientales esperados del proyecto?

12. ¿Cuáles serían los beneficios socio-económicos esperados del proyecto?

13. ¿Cuál es el tiempo esperado para la ejecución de las actividades?

FASE	DURACIÓN ESTIMADA
Pre- factibilidad	
Factibilidad	
Pre- inversión	
Construcción	

14. ¿Cuales son los principales problemas que han impedido la ejecución del proyecto?

- 1 Falta de información
- 2 Falta de capacidad técnica
- 3 Falta de financiamiento
- 4 Falta de capacidad para elaborar la factibilidad

5 Otra: _____

15. ¿Qué tipo de información o entrenamiento le ayudaría a usted a desarrollar el proyecto?

- 1 Información acerca de tecnologías de energía renovable
- 2 Capacitación en el desarrollo de planes de negocios (elaboración de factibilidad técnico/económico)
- 3 Información sobre el entorno legal
- 4 Otro: _____

Fecha:	Firma:
---------------	---------------

Survey for NGO's and Non-traditional Financial Institutions

**Financiamiento de Empresas Energéticas en Centro América (FENERCA)
Encuesta a ONG s y Entidades Financieras no tradicionales**

Nombre de la empresa :	
Principal Actividad productiva:	
País:	Provincia / departamento:
Dirección:	
Persona contacto:	Cargo actual:
No. Teléfono:	No.Fax:
E-mail:	

1. Describa breve y concisamente los objetivos de la organización y su estructura administrativa (e.g. tipo de organización, personal, presupuesto anual, área geográfica de operación):

Objetivos: _____ _____ _____	
Tipo de organización:	Total de personal:
Presupuesto anual 1999:	Presupuesto anual 2000:
Area geográfica de Operación:	
Otros aspectos de interés:	

2. ¿Cuáles de los siguientes servicios ofrece la organización?

- | | |
|----------------------------|-----------------------------|
| 1 Micro-crédito | 2 Intermediación financiera |
| 3 Organización comunitaria | 4 Donaciones |
| 5 Asistencia técnica | 7 Otras: _____ |
| 6 Capacitación | _____ |

3. **(SOLO PARA QUIENES INDICARON MICRO-CRÉDITO EN LA PREGUNTA ANTERIOR, SINO PASE A PREGUNTA 4)**

Indique el mecanismo que utilizan para analizar las solicitudes de crédito, incluyendo las condiciones crediticias y los criterios para determinar la capacidad de pago de los solicitantes.

4. Describa la población meta a la cual se enfocan los servicios de su organización, con respecto a cada uno de los siguientes aspectos:

Ubicación geográfica:		
1 Urbana	2 Rural	3 Mixta
Nivel de ingresos:		

5. Indique el número de beneficiarios actualmente atendidos, y el mercado estimado potencial.

TIPO DE BENEFICIARIO	BENEFICIARIOS ACTUALES	BENEFICIARIOS POTENCIALES
PERSONAS		
FAMILIAS		
COMUNIDADES		
OTROS:		

6. ¿De qué forma se cubren los costos de los servicios que aporta su organización.

FUENTES	ENTIDAD (ES)	% DE LOS COSTOS
APORTE DE DONATES		
SUBSIDIO DE PROGRAMAS GUBERNAMENTALES		
FONDOS REVOLVENTES		
CONTRIBUCIÓN COMUNAL		

7. De acuerdo a su experiencia, utilizando una escala de 0 a 10, donde 10 es la mejor calificación, ¿cómo calificaría usted el grado de satisfacción con que están siendo atendidas las siguientes necesidades básicas de la población meta de la organización?

	Muy insatisfecho					Muy satisfecho							
	0	1	2	3	4	5	6	7	8	9	10	11	NS
Iluminación residencial	0	1	2	3	4	5	6	7	8	9	10	11	NS
Alumbrado Público	0	1	2	3	4	5	6	7	8	9	10	11	NS
Telecomunicaciones	0	1	2	3	4	5	6	7	8	9	10	11	NS
Purificación del agua	0	1	2	3	4	5	6	7	8	9	10	11	NS
Bombeo de agua	0	1	2	3	4	5	6	7	8	9	10	11	NS
Secado de cosechas	0	1	2	3	4	5	6	7	8	9	10	11	NS
Cocción de alimentos	0	1	2	3	4	5	6	7	8	9	10	11	NS
Refrigeración	0	1	2	3	4	5	6	7	8	9	10	11	NS
Micro o pequeña industria	0	1	2	3	4	5	6	7	8	9	10	11	NS
Carga de baterías	0	1	2	3	4	5	6	7	8	9	10	11	NS

8. Para aquellas necesidades que no están siendo bien atendidas, ¿considera usted que sería viable analizar la pertinencia de utilizar fuentes renovables de energía?

1 Si

2 No

10. ¿Cómo calificaría usted la **capacidad interna** de la institución para evaluar empresas pequeñas y medianas dedicadas a la producción de energía renovable?

Muy Limitada	0	1	2	3	4	5	6	7	8	9	10	Mucha Capacidad
---------------------	---	---	---	---	---	---	---	---	---	---	----	------------------------

11. ¿Cómo calificaría **su interés** en aprender más sobre proyectos y empresas dedicadas a la producción de energía renovable?

Sin Interés	0	1	2	3	4	5	6	7	8	9	10	Mucho Interés
--------------------	---	---	---	---	---	---	---	---	---	---	----	----------------------

12. ¿Cómo calificaría usted la **percepción** que tiene la institución respecto a la financiación de clientes y empresas rurales pequeñas del país?

Muy caro y riesgoso	0	1	2	3	4	5	6	7	8	9	10	Es parte importante de su negocio
----------------------------	---	---	---	---	---	---	---	---	---	---	----	--

13. Si a la institución se le presentara una solicitud de financiamiento para proyecto energético pequeño (menor a \$ 100 mil), ¿ cómo calificaría usted las posibilidades de que se apruebe?

Nulas	0	1	2	3	4	5	6	7	8	9	10	Muy Altas
--------------	---	---	---	---	---	---	---	---	---	---	----	------------------

8. ¿Cuales son los principales problemas que han impedido la ejecución del proyecto?

- 1 Falta de liquidez
- 2 Falta de información
- 3 Falta de propuestas y planes de negocios formales
- 4 Falta de capacidad interna para evaluar este tipo de proyecto
- 5 Falta de interés en el mercado rural
- 6 Falta de interés en empresas energéticas de pequeño y mediano tamaño
- 7 Otra: _____

9. ¿Qué tipo de información o entrenamiento le ayudaría a usted a desarrollar el proyecto?

- 1 Información acerca de tecnologías de energía renovable
- 2 Capacitación en el desarrollo de planes de negocios (elaboración de factibilidad técnico/económico)
- 3 Información sobre el entorno legal

4 Otro: _____

10. ¿Cuáles son los requisitos mínimos solicitados por su institución para considerar una propuesta?

11. Favor indicar el nombre y el teléfono de la persona indicada en su institución para participar en un seminario de capacitación en energía renovable con nosotros:

Fecha:	Firma:
---------------	---------------

BUN-CA
P.O. Box 573-2050, Costa Rica
Tel: (506) 283 8835; Fax: (506) 283 8845
E-mail: biomass@sol.racsa.co.cr

E+Co
P.O. Box 13443-1000, Costa Rica
Tel/Fax: (506) 290 6071, 296 3532, 296 4810
E-mail: sergio@knowhow.energyhouse.com

ANNEX 2:

List of Enterprises Supported by FENERCA and Status

ANNEX 2: ENTERPRISES SUPPORTED WITH ENTERPRISE DEVELOPMENT SERVICES

Enterprise/Project	Country	Technology	Capacity	Project Status
Agencia Energia	Brazil	SWH	TBD	Attracting Financing
Amorgua (F9)	Brazil	Solar Drying	2-3 solar dryers	Early stage
Ascima (F9)	Brazil	Solar Wat Pump	1 water pumps	In Operation
Baixo Sul Cassava	Brazil	Biodigestors		
Banco Do Polvo	Brazil	Microfinance (PV)	TBD	Attracting Financing
Braselco	Brazil	Biomass		
Carbo Charcoal	Brazil	Biomass	2,500 m3/month	Construction to start soon
Carvonbras	Brazil	Biomass		
Ceramica Bandeira (PU)	Brazil	Biomass		Operating
Coocredi (F9)	Brazil	RE	N/A	Attracting Financing
Eco Invest	Brazil	Wind	28 MW	Early stage
Eco Mapua	Brazil	biodigestors	3 MW	Early stage
Energia Pura	Brazil	RE	TBD	Attracting Financing
Fazenda	Brazil	Hydro		
HidroSol	Brazil	PV –SWH	2 units	In Operation
Hot Sat (PU)	Brazil	PV		
Hydrokinetic Turbine	Brazil	Hydro		
IDEAAS (PU)	Brazil	PV		
Juerana	Brazil	PV	3 systems	Attracting Financing
LastroCom	Brazil	Biomass	TBD	Attracting financing
Mandalla	Brazil	PV – irrigation	TBD	Early stage
Nova Gerar	Brazil	Biogas		
Operarias do Mel (PU)	Brazil	Solar Drying	8 solar dryers	In Operation
Ouro Branco	Brazil	Biomass	580 kW	Restructuring their business plan
Pindorama	Brazil	Co-gen		
Solar Moveis (PU)	Brazil	Solar Dryers	10 units	In Operation
Solaris	Brazil	PV (SWH)	TBD	Early stage
Union Industrias	Brazil	Co-gen		
Vertical Axis Wind	Brazil	Wind		
Village (PU)	Brazil	PV WatPump	8-120 W panels	In operation

Eco-Carbon	EI	Salvador	Biomass	100,000 bags/year	Attracting financing, restructuring marketing strategy
EEEN	EI	Salvador	Biomass	5 MW	Operating
Jocoro Farm (PU)	EI	Salvador	Wind	1 wind water pump	Pilot
Sabes	EI	Salvador	Hydro	70 kW	Attracting financing – Regulatory approval pending
Tecnosolar	EI	Salvador	PV	300 SHS	Operating and business plan restructuring
Biogas Engineering	Ghana	Ghana	Biogas	TBD	Early stage
UASI	Ghana	Ghana	Solar Thermal	TBD	Feasibility stage
Chan Chan	Guatemala	Guatemala	Hydro	TBD	Idea
Dintersa	Guatemala	Guatemala	PV	100 SHS	Business plan in preparation
El Ocosito	Guatemala	Guatemala	Hydro	4 MW	Attracting financing Feasibility stage
El Rodeo	Guatemala	Guatemala	Wind	3 MW	Attracting financing
Geoteca	Guatemala	Guatemala	Geothermal	5 MW	Feasibility studies concluded
Ixpil	Guatemala	Guatemala	Hydro	5MW	Feasibility stage
Jones	Guatemala	Guatemala	Hydro	3.5 MW	Reaching financial closure
La Castalia	Guatemala	Guatemala	Hydro	2 MW	Attracting financing, pre-feasibility phase
La Laguna	Guatemala	Guatemala	Geothermal	2 MW th	Restructuring business plan
Papeles Elaborados	Guatemala	Guatemala	Hydro	12 MW	Operating (8.2 MW)/Expansion (2.8 MW)
San Judas	Guatemala	Guatemala	Hydro	30 MW	Attracting financing – Regulatory approval pending
Selmeca	Guatemala	Guatemala	Hydro	1 MW	In search of equity partners – PPA under negotiation
Atlantis	Honduras	Honduras	Hydro	1.8 MW	Attracting Financing
Cececapa	Honduras	Honduras	Hydro	2.8 MW	Construction
Cenit	Honduras	Honduras	Hydro	520 kW	Ready for Construction
Cuyamel II	Honduras	Honduras	Hydro	4 MW	Feasibility stage
El Cisne	Honduras	Honduras	Hydro	750 kW	Not moving forward
Hidro Yojoa	Honduras	Honduras	Hydro	630 kW	Under Construction
La Boquita	Honduras	Honduras	Hydro	~1MW	Attracting Financing
La Esperanza	Honduras	Honduras	Hydro	13.5MW	In operation 1.5 MW and under construction 12 MW
Puringla	Honduras	Honduras	Hydro	5.8 MW	Feasibility stage

Riachuelo	Honduras	Hydro	TBD	Not moving forward
Rio Lindo	Honduras	Hydro	1 MW	Defining equity structure
Santiago	Honduras	Hydro	~7MW	Feasibility Stage
Sedes	Honduras	Hydro	0.5-3 kW per system	3 systems installed
Snow Mountain - La Nieve	Honduras	Hydro	480 kW	In operation
Solaris	Honduras	PV	TBD	Attracting financing, Restructuring business strategy
Soluz	Honduras	PV	1,250 clients on a fee for services basis	In operation and urestructuring their business plan
Tres Valles	Honduras	Biomass	12.3 MW	Operation (10 MW) Expansion (2.3 MW)
Tres Valles	Honduras	Hydro	5 MW	Feasibility studies showed that the project is unviable
AMEC (PU)	Nicaragua	Wind Water pumping	TBD	Operating
Aprodelbo	Nicaragua	Hydro	425 kW	Attracting financing, Restructuring business strategy
Aselbo - El Bote	Nicaragua	Hydro	900 kW	Under Construction
Asolpic	Nicaragua	Hydro		?
Atder	Nicaragua	Hydro	1-3 kW per system	Attracting financing
Bronzbeak - Gemina	Nicaragua	Biomass	1.4 MW	Attracting Financing
Selva Negra	Nicaragua	Wind	65 kW	Not moving forward
Tecnosol	Nicaragua	PV	~1,400 SHS	Operating
Tecnosol II	Nicaragua	PV	6,400 SHS	In operation
Aboquete	Panama	Biomass	TBD	Restructuring business strategy
Ademipp	Panama	PV	300W per system	Pilot system installed
Adonis – Bocas del Toro	Panama	PV	2 solar systems	Not moving forward
Ancon	Panama	PV	1,200 W	System design concluded
EEP	Panama	Hydro	18.7 MW (3 projects)	Attracting financing/feasibility stage

				5 different project with a total of 38.5 MW	Attracting financing. Pre-feasibility stage
EPPSA	Panama	Hydro			
Los Estrechos	Panama	Hydro		20 MW	Pre-feasibility
Pass	Panama	PV		TBD	Redefining market strategy to expand in new markets
Santa Fe	Panama	Hydro		5 MW	Feasibility
Solarpan	Panama	PV		100 systems	Early stage - defying business strategy
Africa Wind	South Africa	Wind		1 kW turbine (10-30 units/month)	Relocating business from Zimbabwe to South Africa
Agama	South Africa	Biogas			
Alpha Solar	South Africa	PV		11 MWh/day	Feasibility studies showed that the project is unviable
Amatola	South Africa	Biom & wind		40systems (300 watt)	Restructuring their business plan
Aqua-gen	South Africa	Hydro		TBD	Pilot phase
Bethlehem Hydro	South Africa	Hydro		3.9 MW	Reaching financial closure
Koch Solar Stoves	South Africa	PV - Stoves		8,000 over 3 years	
Ndizilo	South Africa	PV		TBD	Restructuring their business plan
New Co	South Africa	PV		10,000 over 3 years	
New Energies	South Africa	PV (SWH)		6 industrial units	In operation
Seatex Investments	South Africa	Biomass		40 tons/month	BP unviable enterprise
Solar Beam	South Africa	Solar Water Heating		Sales of 370 units for developmental housing	Operating and 100 systems installed
Solar Heat Exchangers	South Africa	Solar Water Heating		TBD	Restructuring their business plan

				110 metric tones/month	Further market analysis needed
BBMC	Tanzania	Biomass		75-100 kg fruit/week	Attracting financing
FADECO (PU)	Tanzania	Solar Drying		TBD	Restructuring their business plan
Katani Ltd	Tanzania	Biogas		3,360 tones/year	Attracting financing
KIDT	Tanzania	Biomass		50 systems	In operation
MONA II	Tanzania	PV		10 large-scale systems	Attracting financing
RESCO	Tanzania	PV			
REX	Tanzania	PV			In Operation
SWENAP	Tanzania	Biomass		~200 pieces/ month	Defining equity structure
KBPS	Zambia	Biomass			
Mulembo Farms	Zambia	Mini Hydro		TBD	Attracting financing
RCI	Zambia	Biofuel		16000 L Ts Jatropha oil 17000 Kg fertilizer	In operation
TSADC (PU)	Zambia	Solar Ovens - Bakery			In operation
Zambezi Rapids	Zambia	Hydro			

ANNEX 3:

List of Business Plans Completed

ANNEX 3: LIST OF BUSINESS PLANS COMPLETED

#	Enterprise	Country
1	Banco do Povo	Brazil
2	Carbo	Brazil
3	Coocredi	Brazil
4	Eco Mapua	Brazil
5	Energia Pura	Brazil
6	Fazenda	Brazil
7	Juerana	Brazil
8	Lastrocom	Brazil
9	Nova Gerar	Brazil
10	Solar Moveis	Brazil
11	Vertical Axis Wind	Brazil
12	Eco-Carbon	El Salvador
13	EEN	El Salvador
14	Jocoro	El Salvador
15	Sabes	El Salvador
16	Tecnosolar	El Salvador
17	UASI	Ghana
18	El Ocosito	Guatemala
19	El Rodeo	Guatemala
20	Ixpil	Guatemala
21	Jones	Guatemala
22	La Castalia	Guatemala
23	La Laguna	Guatemala
24	San Judas	Guatemala
25	Selmeca	Guatemala

#	Enterprise	Country
32	La Esperanza	Honduras
33	Sedes	Honduras
34	Snow Mountain	Honduras
35	Tres Valles	Honduras
36	AMEC	Nicaragua
37	Aprodelbo – La Camaleona	Nicaragua
38	Aselbo – El Bote	Nicaragua
39	Atder	Nicaragua
40	Bronzeoak	Nicaragua
41	Tecnosol	Nicaragua
42	Tecnosol II	Nicaragua
43	Ademipp	Panama
44	Ancon	Panama
45	EPPSA – La Cuchilla, Bocalatún	Panama
46	EPPSA – Macano, Concepción	Panama
47	EPPSA – Ojo de Agua	Panama
48	EPPSA – Rio Cochea	Panama
49	EPPSA – San Andres	Panama
50	Los Estrechos*	Panama
51	Bethlehem	South Africa
52	New Co	South Africa
53	New Energies	South Africa
54	Solar Beam	South Africa
55	BBMC	Tanzania
56	FADECO	Tanzania

26	Atlantis	Honduras
27	Cececapa	Honduras
28	Cenit Zacapa	Honduras
29	El Cisne*	Honduras
30	Hidro Yojoa	Honduras
31	La Boquita	Honduras

57	KIDT	Tanzania
58	MONA	Tanzania
59	RESCO	Tanzania
60	REX	Tanzania
61	Mulembo	Zambia
62	RCI	Zambia

ANNEX 4:

List of Training Sessions for Financial Institutions and Participants

ANNEX 4: LIST OF WORKSHOPS FOR FINANCIAL INSTITUTIONS AND PARTICIPANTS

Financial Engineering Workshops for Financial Institutions:

	Name	Institution	Country	Date
1	Rodolfo Sanitzo	Ministerio de Energía y Minas	Guatemala	1/23/2001
2	Victor Hugo Hernández	BCIE – Guatemala	Guatemala	1/23/2001
3	Cesar Tampan	Banco de Exportación, BAÑES	Guatemala	1/23/2001
4	Horacio Leiva Madrid	Banco Reformador	Guatemala	1/23/2001
5	Celso Rolando Molina	BANRURAL	Guatemala	1/23/2001
6	Cesar Ríos	Corporación de Occidente	Guatemala	1/23/2001
7	Guillermo Rodas Santos	COOPEDERU	Guatemala	1/23/2001
8	David Kittelson	NRECA	Guatemala	1/23/2001
9	Marta de Rivera	SD Río Hondo	Guatemala	1/23/2001
10	Margie Godoy de Casanova	Banco Credomatic	Honduras	2/27/2001
11	Claudia M. Zelaya	Banco de la Producción	Honduras	2/27/2001
12	Julio Perdomo	Banco de la Producción	Honduras	2/27/2001
13	Ana María Matamoros	Banco Hondureño del Café	Honduras	2/27/2001
14	Carlos Borjas	Banco Capital	Honduras	2/27/2001
15	Enrique Ponce	Banco Futuro	Honduras	2/27/2001
16	Jorge A. Villalobos	B. Nacional de Desarrollo Agrícola	Honduras	2/27/2001
17	Melissa Stefan	Banco Mercantil	Honduras	2/27/2001
18	Juan J. Mourra	Banco Mercantil	Honduras	2/27/2001
19	Jony Rodríguez	Banco de los Trabajadores	Honduras	2/27/2001
20	Flavio E. García	Banco Altamida	Honduras	2/27/2001
21	Marco A. Pérez	Grupo BGA Ahorro Hondureño	Honduras	2/27/2001
22	Pedro Emilio Banegas	BCIE	Honduras	2/27/2001
23	Ernesto Berganza	BCIE	Honduras	2/27/2001
24	Jorge Chain Reyna	Banco Sogerin	Honduras	2/27/2001
25	Ricardo Membreño	Solaris S.A.	Honduras	2/27/2001
26	Marco T. Banegas	FONAPROVI	Honduras	2/27/2001
27	Augusto Tejeira	Banco Continental	Panama	4/3/2001
28	Abey Saied	Banco Continental	Panama	4/3/2001
29	Jaime Torres	Banco de Desarrollo	Panama	4/3/2001

		Agropecuario		
30	Arnoldo Lombardo	Banco de Desarrollo Agropecuario	Panama	4/3/2001
31	Idalia Sáenz	Banco del Istmo	Panama	4/3/2001
32	Evelyn Acosta	Banco General	Panama	4/3/2001
33	Carlos Beceira	Banco Nacional de Panamá	Panama	4/3/2001
34	Juan Cárdenas B.	Banco Nacional de Panamá	Panama	4/3/2001
35	Raúl Guizado	BIPAN	Panama	4/3/2001
36	Carlos Arjona	METROBANK	Panama	4/3/2001
37	Errol Alvarez	MULTICREDIT BANK INC	Panama	4/3/2001
38	Gorge Jaen	GLOBAL BANK	Panama	4/3/2001
39	Edison Jaen	UNION FENOSA	Panama	4/3/2001
40	Román Ricord	UNION FENOSA	Panama	4/3/2001
41	Carmen Lay	Autoridad Nacional del Ambiente	Panama	4/3/2001
42	Roberto Carrillo	PNUD	Panama	4/3/2001
43	José María Quintero	CREDIFUNDES	Panama	4/3/2001
44	Paola Ley	BDF	Nicaragua	4/6/2001
	Name	Institution	Country	Date
45	Gustavo Largaespada Beltrand	Banco Clay Dognall	Nicaragua	4/6/2001
46	Cristobal Silva	BID	Nicaragua	4/6/2001
47	Roeger Mendieta	BANCENTRO	Nicaragua	4/6/2001
48	Luis E. Morales L	BANEXPO	Nicaragua	4/6/2001
49	Mayra López Munguía	BANIC	Nicaragua	4/6/2001
50	Rosa Matilde Tablada	FNI	Nicaragua	4/6/2001
51	Julio Ramirez Arguello	BANPRO	Nicaragua	4/6/2001
52	Marco A Narváez B	ASOBANP	Nicaragua	4/6/2001
53	Efraín Laureano	USAID	Nicaragua	4/6/2001
54	Vladimir Delagneau	TECNOSOL S.A	Nicaragua	4/6/2001
55	Freddy Oporta	FADES	Nicaragua	4/6/2001
56	Eugenia Bonilla Velásquez	Banco Americano	El Salvador	5/14/2001
57	Francisco Segovia	Banco Cuscatlán	El Salvador	5/14/2001
58	Gilma Teresa Saravia de Pleitez	B. de Fomento Agropecuario	El Salvador	5/14/2001
59	Roger Rafael Alfaro Araujo	B.Multisectorial de Inversiones	El Salvador	5/14/2001

60	Jéssica de Cabezas	Banco Salvadoreño	El Salvador	5/14/2001
61	Luis Alberto Sánchez Avelar	Caja De Crédito De La Libertad	El Salvador	5/14/2001
62	Daniel Calderón Martínez	Caja De Crédito De Sonsonate	El Salvador	5/14/2001
63	Oscar Eduardo Lindo	Valores Cuscatlán	El Salvador	5/14/2001
64	Alicdes Hernández	CAESS (Financistas)	El Salvador	5/14/2001
65	Luis Montesinos	CAESS	El Salvador	5/14/2001
66	Manuel Saavedra	CAESS	El Salvador	5/14/2001
67	Mirna Márquez	CAESS	El Salvador	5/14/2001
68	Baltimore Amaya	Comisión Ejecutiva Hidroeléctrica Río Lempa	El Salvador	5/14/2001
69	Mauricio Ayala	MARN	El Salvador	5/14/2001
70	Carolina de Dreykon	PNUD	El Salvador	5/14/2001
71	Ana María González	MARN	El Salvador	5/14/2001
72	Arturo Solano	Tecnosolar	El Salvador	5/14/2001
73	Oriando Aguilar	BUN-CA	Guatemala	1/23/2001
74	María Engracia de Trinidad	BUN-CA	Guatemala	1/23/2001
75	Ana Cristina Zepeda	BUN-CA	Guatemala	1/23/2001
76	Ana María González	BUN-CA	Guatemala	1/23/2001
77	Luis Aké	BUN-CA	Guatemala	1/23/2001
78	Jorge Luis Galindo	BUN-CA	Guatemala	1/23/2001
79	Gilbert Masís	BUN-CA	Guatemala	1/23/2001
80	Joost Siteur	BUN-CA	Guatemala	1/23/2001
81	Sergio Guillén	E&CO/LAC	Guatemala	1/23/2001
82	Deborah McGinn	E&CO/USA	Guatemala	1/23/2001
83	José María Blanco	BUN-CA	Guatemala	1/23/2001
84	Leonel Umaña	BUN-CA	Guatemala	1/23/2001
85	Fernando Alvarado	E&CO/LAC	Guatemala	1/23/2001
86	Gina Rodolico	E&CO/USA	Guatemala	1/23/2001
87	Johanna Hjethén	E&CO/USA	Guatemala	1/23/2001
88	Suyapa Zelaya	OICH	Honduras	2/27/2001
89	Diana Solís	Soluz Honduras	Honduras	2/27/2001
90	Jorge Morales	BCIE	Honduras	2/27/2001
91	Lorna Li	E+CO	Honduras	2/27/2001
92	Elmer González	BUN-CA	Panama	4/3/2001

Financial Institutions Trained on How to Finance Hydroelectric Projects:

	Institution	Country	# of People trained	Date
1	Banco Industrial	Guatemala	2	8/6/2002
2	Banco del Café	Guatemala	2	8/6/2002
3	Banco de Occidente	Guatemala	1	8/6/2002
4	Banco Agromercantil	Guatemala	1	8/6/2002
5	BGA	Honduras	2	8/8/2002
6	Bamer	Honduras	2	8/8/2002
7	Banco Allamida	Honduras	3	8/8/2002
8	Banco Comercio	El Salvador	2	11/14/2002
9	Banco Cuscatlan	El Salvador	2	11/14/2002
10	Banco Salvadoreño	El Salvador	2	11/14/2002
11	BCIE	El Salvador	1	11/14/2002
12	Banco Agrícola	El Salvador	1	11/14/2002
13	Banco Cuscatlan	El Salvador	1	11/14/2002
14	Bancentro	Nicaragua	1	11/12/2002
15	Banpro	Nicaragua	1	11/12/2002
16	BCIE	Nicaragua	2	11/12/2002
17	BDF	Nicaragua	1	11/12/2002
18	Caley Dagnall	Nicaragua	2	11/12/2002
19	LAFISE	Nicaragua	1	11/12/2002
20	Banco Uno (Banexpo)	Nicaragua	2	11/12/2002
21	Nicaragua Sugar	Nicaragua	1	11/12/2002
22	Coperco	Nicaragua	1	11/12/2002
23	Yesera	Nicaragua	1	11/12/2002
24	Global Bank	Panama	1	12/12/2002
25	BDA	Panama	2	12/12/2002
26	BAC	Panama	2	12/12/2002
27	Citibank	Panama	1	12/12/2002
28	Credicorp	Panama	1	12/12/2002
29	Caja de Ahorro	Panama	4	12/12/2002
30	BankBoston	Panama	2	12/12/2002
31	Société Generale	Panama	1	12/12/2002

32	BBVA	Panama	1	12/12/2002
33	BNP	Panama	1	12/12/2002
34	Continental	Panama	1	12/12/2002
	Total of People		52	

Working Sessions with Financial Institutions:

	Financial Institutions	# of Financiers Trained	Country	Date
1	EcoBank	1	Ghana	11/10/2004
2	African Development Facility (AFDP)	1	Ghana	11/10/2005
3	Business Beat	1	South Africa	11/16/2004
4	Energy Development Corporation (EDC)	3	South Africa	7-1-04 & 11-26-04
5	ABSA	3	South Africa	7-1-04& 2-24-05
6	Women's Development Bank	1	South Africa	7/1/2004
7	UNDP	1	South Africa	2/15/2005
8	BAC	1	South Africa	2/19/2005
9	CCT	1	South Africa	2/22/2005
10	DME	1	South Africa	2/23/2005
11	Euro Africa Bank	1	Tanzania	2/11/2005

Workshops on Renewable Energy:

	Type of Event	# of Financiers Trained	Country	Date
	Seminar on Renewable Energy	4	South Africa	Jul, 2004

ANNEX 5:

Projects Presented to Financial Institutions for Investment

ANNEX 5: PROJECTS PRESENTED TO FINANCIAL INSTITUTIONS FOR INVESTMENT CONSIDERATION

#	Project	Country	FI(s)	\$ Under Consideration	\$ Approved	\$ Disbursed
1	Ascima	Brazil	E+Co			47,500
2	Amorgua	Brazil	E+Co		18,400	
3	Carbo Charcoal	Brazil	E+Co			128,000
4	Ceramica	Brazil	E+Co			102,041
5	Coocredi	Brazil	E+Co	x		
6	Hidrosol	Brazil	E+Co			14,960
7	Operarias	Brazil	E+Co			27,000
8	Solar Moveis	Brazil	E+Co			20,340
9	Village	Brazil	E+Co SDG			55,000
10	EEN	El Salvador	E+Co	x		55,000
11	Tecnosolar	El Salvador	E+Co			25,000
12	Dintersa	Guatemala	NRECA			50,000
13	El Ocosito	Guatemala	E+Co		50,000	
14	Jones	Guatemala	E+Co Caseif		700,000	150,000
			Banco Agromercantil		3,500,000	
15	La Castalia	Guatemala	Segelpan	x		
16	La Laguna	Guatemala	E+Co	x		

17	San Judas	Guatemala	E+Co					
18	San Marcos	Guatemala	NRECA					
19	Selmeca	Guatemala	CABEI					
20	Papeles	Guatemala	Banco Industrial					15,000,000
21	Atlantis	Honduras	BAC					
22	La Esperanza	Honduras	E+Co					450,000
			BCIE, BGA, SIMET, Garron					10,938,563
23	Hidro Yojoa	Honduras	BGA					500,000
24	La Boquita	Honduras	E+Co				185,000	
25	Cececapa	Honduras	CABEI					2,300,000
26	Cenit	Honduras	CABEI				300,000	
27	Snow Mountain	Honduras	E+Co					250,000
28	Sedes	Honduras	E+Co					
29	Tres Valles	Honduras	CABEI					4,860,000
30	Bronzeoak	Nicaragua	E+Co and PCF					
31	Tecnosol	Nicaragua	E+Co					300,000
32	Aselbo – El Bote	Nicaragua	Cosude					300,000
			GOB/CNE					250,000
33	Alder	Nicaragua	Cosude					
34	Aproelbo	Nicaragua	Cosude					
35	Ademipp	Panama	ANAM					
36	Ancon	Panama	E+Co					
37	Amatola	South Africa	ETEF					340,000
38	Bethlehem	South Africa	ETEF					
39	New Energies	South Africa	E+Co					

40	Solar Beam	South Africa	ETEF and EDF				248,154
41	MONA 2	Tanzania	E+Co		x		
42	RESCO	Tanzania	E+Co			63,000	100,000
43	REX	Tanzania	E+Co			153,000	
44	FADECO	Tanzania	E+Co			27,000	
45	KBPS	Zambia	E+Co		x		
46	RCI	Zambia	E+Co				8,000
						4,996,400	36,819,558

ANNEX 6:

CAREC's Marketing Brochure





Central American Renewable Energy and Cleaner Production Facility

Closing expected in Fourth Quarter 2004

The Central American Renewable Energy and Cleaner Production Facility ("the Facility") is an innovative mezzanine and debt financing facility being developed by E+Co LAC with financial and institutional support of the Multilateral Investment Fund (MIF) of the Inter-American Development Bank (IDB). The manager of the Facility will be E+Co Capital ("the Manager"), a fully owned company of E+Co LAC, a specialized renewable energy and energy efficiency financial services company with more than 10 years experience in project finance in Latin America.

The Facility will invest in proven renewable energy technologies, energy efficiency and cleaner production projects in the seven countries of the Central American region (Costa Rica, El Salvador, Belize, Guatemala, Honduras, Nicaragua and Panama). The Facility will not be a private equity fund, but rather intentionally structured to utilize mezzanine-financing mechanisms such as subordinated debt, convertible debt, preferred shares and other quasi-equity instruments. The main objective of the Facility is to promote the use of renewable energy technologies for power generation and to improve the use of energy and other inputs for companies' operations in Central America. The Manager will seek to identify 25-30 small and medium-sized enterprises (SMEs), with annual revenues of up to US\$5 million and less than 100 employees in the Central American region with strong technical and management teams that can benefit from the financing to be provided by the Facility. Eligible sectors include grid-connected renewable energy that utilizes proven technologies such as hydro, biomass, wind, geothermal and alternative cogeneration schemes. The Facility can also invest in companies employing energy efficiency measures and cleaner production improvements.

Investments will be made in fixed cost projects and enterprises with contracted revenues through either long-term power purchase agreements (PPAs), energy efficiency and cleaner production service agreements and performance contracts. Return on investments will be generated from fixed interest rate payments, predefined preferred dividends, partial minority shareholding conversions and golden shares. Investments will be exited through contractually pre-established repayment schedules, thus enabling a controlled and predictable exit of the Facility for each deal. The Manager will invest resources from the Facility following a diversification strategy that will limit investments by country, business sector and technology. The investment period is five years after which the Facility commences with the distributions to investors until the end of the term of 10 years.

The Manager expects a first closing by the fourth quarter of 2004 with a minimum capitalization of US\$15 million and a second closing one-year later with an additional US\$5 million for a total capitalization of US\$20 million. The Multilateral Investment Fund (MIF) of the Inter-American Development Bank (IDB) has already approved a US \$5 million equity investment in CAREC plus US\$500,000 in grant resources for technical assistance; the United Nations Foundation (UNF) has expressed interest in matching this technical assistance grant with additional US\$500,000. The Central American Bank of Economic Integration (CABEI) is considering a US\$5 million equity investment, which is expected to be submitted for Board approval in late September 2004. B-I-O, the development bank of Belgium, is assessing a US\$2 million investment, which is expected to be submitted for approval by late October 2004. In addition, the USAID Development Credit Authority (DCA) is assessing a US\$5 million loan guarantee to CAREC to cover up to 50% of any private sector lenders to CAREC. E+Co is currently in conversations with other investors including US high net worth individuals.

This document is not an offer for sale, or a solicitation of an offer to buy, any security or other interest in the Facility. Any such offer, sale or solicitation will be made solely by means of a private placement memorandum or similar document, and a related subscription agreement.

Recipients of the document should be aware that the Facility has not been and may never be formed, and this if it is formed, its structure, purpose, terms and operators may be significantly different from those contemplated in this document.

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Investment Opportunity and Strategy

The Opportunity: The Central American region, comprised of seven small countries with a population of 40 million, represents an important and perhaps unique opportunity to develop a sustainable energy market. It is a manageable market with an established appetite for grid-connected renewable energy, energy efficiency and cleaner production investments. There exist a capable core of clean energy entrepreneurs, specific renewable energy project success stories and support programs (such as the ones implemented by E+Co) to assist these entrepreneurs convert initiatives into solid investment opportunities.



E+Co funded, 485 kW La Esperanza Hydroelectric project, Honduras

Almost 20 million people still lack access to modern energy in the Central American region. Continued demographic growth, economic growth and increasing coverage of national electric grids will continue requiring steady investment in the electric sector in the region.

The economies of these countries have been growing steadily at an average annual rate of 5% for the last decade. These economies are essentially “dollarized”, making cross-border transactions easier to organize. With this economic growth, continued increase in each country’s electricity generation capacity has been necessary.

The region’s installed capacity in 2002 was 7,898 MW, of which 63.4 % was in the hands of private sector investment and 51.1% was supply capacity based on renewable energy resources.

Nevertheless, most of the recent additional capacity has been based on fossil fuel generation technologies, with the exemption of some particular technologies that seem to be finding small but interesting niches for installation like wind and geothermal plants.

Demand growth for electricity in Central America continues to be around a 5-6% annually or approximately 5000-5700 MW of new installed capacity in the next 10 years. In such a framework of time, different simulation models call for a participation of renewable energy resources in the order of 50-63% or 2,750 MW of renewable energy, signaling that annual investments in renewable energy projects must be in the order of 300-350 MW regionally compared to a current trend of about 160 MW per year. This represents an investment of approximately US\$ 4 billion over the next 10 years. Provided 20% of this investment comes from equity sources and 60% from traditional senior debt, approximately US\$800 million could be invested through mezzanine financing. A mezzanine type of Facility such as the one being developed should address these market opportunities.

With the growing necessity of reducing costs and improving competitiveness, more and more Central American companies are seeking ways of using energy efficiency and cleaner production techniques as a means to lower energy costs and improving productivity. This will be of pressing importance in light of the Free Trade Agreement between Central America and the United States, which is currently being negotiated. Energy efficiency achieves important reductions in electricity bills by replacing obsolete equipment, improving processes and training users to operate electric appliances and machinery in the most efficient way. Similarly, cleaner production refers to a management process that seeks out and eliminates the causes of pollution, waste generation and excess resource consumption at their source through input reductions or substitutions, pollution prevention, internal recycling and more efficient production technology and processes. Energy efficiency and cleaner production projects are characterized by having simple payback in relatively short periods of time and returns between 20% and 40% in dollars.

With 10 years of experience in supporting small



and medium sized enterprises (SMEs) in Latin America through the provision of enterprise development services (EDS) and early stage and growth capital specifically related to renewable energy and energy efficiency financing, E+Co is uniquely qualified to manage the Facility.



E+Co funded, 485 kW, La Nieve Hydroelectric plant, Honduras

The solid pipeline that the Manager has developed plus its extensive network of key stakeholders in Central America, sets the Facility apart from any other financing vehicle or similar mechanism developed in the past or in existence.

Collateral business opportunities such as the commercialization of Certified Emission Reductions (CERs) commonly known as carbon credits will most likely be capitalized for the benefit of the investors in the Facility. The Manager, in partnership with the leading international carbon brokerage firm EcoSecurities, Ltd. has created the 2E Carbon Access (2ECA) carbon monetization facility. 2ECA has been tailored to provide SMEs coverage of costly CERs certification and commercialization and most importantly, making possible up-front payment of CERs when project developers need them the most (monetization). Investee companies supported by the Facility should become captive clients for 2ECA, generating extra fees and revenues for the Facility investors.

The Strategy: The Facility will provide mid- to long-term financing in a portfolio consisting of proven renewable energy, energy efficiency and cleaner production projects and companies in Central America, through mezzanine financing. The Manager will invest in fixed cost projects that

have contracted revenue streams, thus providing measured upside and limited downside to investors. The Manager will try to minimize risks by developing diverse mitigation measures and at the same time maximize overall Facility return.

Investments will be exited through pre-agreed repayment of subordinated loans and redemption of preferred share emissions. Most investments in grid-connected renewable energy projects will be made for terms of 8 to 10 years, repayable through balloon or bullet payments. Investments in energy efficiency and cleaner production projects will be made for terms of 2 to 5 years and exited according to each project's energy savings or cost savings projections.

The Manager anticipates a minimum overall return of 10% for investors in the Facility.

Key Facility Manager qualifications:

- Close to 10 years experience in the renewable energy and energy efficiency sector doing project finance with a triple bottom line (social, environmental, financial) orientation.
- Local Central American presence – the E+Co name is well recognized within the entrepreneurial, financial and governmental communities.
- Strong existing pipeline and deal flow, more than forty solid projects already identified.
- Unique experience incubating projects since their early stages, as opposed to the traditional venture fund approach of "cherry picking". This provides a better understanding of the real issues related to the sponsors and enterprises and gives the ability to tailor services and investment.
- E+Co currently manages the Financing of Renewable Energy Enterprises in Central America (FENERCA) program – the only regional initiative in Central America identifying and supporting renewable energy, which provides a solid platform for project identification and incubation.
- The manager will be based in San José, Costa Rica and will benefit from the extensive regional network of contacts and partners that E+Co and the FENERCA program have in Central America.



After more than ten years experience in the Latin American region, supporting renewable energy and energy efficiency enterprises through the provision of enterprise development services and investment funds, E+Co LAC concluded that, in spite of playing an important role in filling financing gaps and building capacity of entrepreneurs and traditional financiers to facilitate implementation of SMEs, this effort was not being sufficient to overcome many of the still existing barriers that most entrepreneurs face when trying to develop their enterprises. If E+Co LAC was to seize the opportunity of a growing demand for clean energy generation and energy efficiency, it needed to define, create, structure and implement an innovative and new facility to respond to the challenge. Through its years of experience working with enterprises E+Co LAC understands what a truly tailored facility – realistic about what clean energy generation, cleaner production and energy efficiency enterprises can deliver in terms of returns and exit terms – needs to be.

E+Co LAC

E+Co LAC is a specialized financial services firm and fund manager operating since 1994 in Latin America and The Caribbean. E+Co LAC is focused in supporting renewable energy and energy efficiency projects and companies. Its services are specialized because they include the unique combination of enterprise development services (EDS) and investment funds to provide comprehensive solutions to small and medium sized enterprises in developing countries. It is a fund manager because since 1996 it has been managing a Venture Facility and a Grant Facility received from the MIF/IDB.

E+Co LAC has physical presence in San José, (Costa Rica) Cochabamba (Bolivia) and Bahia (Brazil), from where its staff travels extensively and regularly throughout Central and South America and the Caribbean. E+Co LAC has direct contact with the key stakeholders in the renewable energy sectors in each country, and especially in Central America. These include, regional and local banks, NGOs, USAID missions, local and national government agencies and officials, utilities, electric sector regulators, associations of renewable energy generators and entrepreneurs.

E+Co's investments pursue triple bottom line returns, financial, environmental and social. Since inception, E+Co LAC has supported more than 100 renewable energy and energy efficiency enterprises throughout the Latin American and Caribbean region. Since April 2000, E+Co LAC has been implementing the USAID sponsored Financing of Renewable Energy Enterprises in Central America (FENERCA) program, which includes activities in Guatemala, Honduras, El Salvador, Nicaragua and Panama. The program's objective is to develop the renewable energy sector in five countries in Central America, building on the E+Co approach: EDS plus investment. E+Co has developed and delivered proprietary manuals and tools to SMEs such as the Off-grid Manual, Business Plan Preparation Manual, Calculation of Carbon Credits Manual and Financing of Hydroelectric Plants Manual. In addition, it has co-authored two renewable energy sector diagnose of policy barriers manuals.

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ANNEX 7:

CAREC's Pipeline

ANNEX 7: CAREC'S PIPELINE

#	PROJECT	COUNTRY	TECHNOLOGY	DESCRIPTION	CAPACITY	COST	DEBT	EQUITY	EST.	STATUS
1	Jones Hydro	Guatemala	Hydro	Small hydro plant to sell energy and capacity to the grid through a PPA	4,400	\$5,200	\$3,380	\$1,820	22%	Feasibility completed
2	San Judas	Guatemala	Hydro	Medium-sized hydro plant to sell energy and capacity to the grid through the spot market	30,000	\$50,000	\$32,500	\$17,500	22%	Advanced feasibility
3	Ixpil	Guatemala	Hydro	Small hydro plant to sell energy and capacity to the grid through a PPA	5,000	\$7,500	\$4,875	\$2,625	20%	Feasibility completed
4	Chan Chan	Guatemala	Hydro	Small hydro plant to sell energy and capacity to the grid through a PPA	2,000	\$3,800	\$2,470	\$1,330	15%	Advanced feasibility
5	El Ocosito	Guatemala	Hydro	Small hydro plant to sell energy and capacity to the grid through a PPA	4,000	\$5,900	\$3,835	\$2,065	30%	Pre feasibility
6	El Cisne	Honduras	Hydro	Small run of the river plant to sell energy to the grid through a PPA	711	\$1,217	\$791	\$426	20%	Feasibility completed
7	Aguas Claras	Honduras	Hydro	Small hydro plant to sell energy and capacity to the grid through a PPA	4,000	\$6,000	\$3,900	\$2,100	25%	Early feasibility
8	El Cortesito	Honduras	Hydro	Small-sized hydro plant to sell energy to the grid through a PPA	5,000	\$5,333	\$3,733	\$1,600	30%	Feasibility completed
9	San Carlos	Honduras	Hydro	Small-sized hydro plant to sell energy to the grid through a PPA	4,300	\$3,933	\$2,753	\$1,180	23%	Feasibility completed
10	Cececapa	Honduras	Hydro	Small-sized hydro plant to sell energy to the grid through a PPA	2,800	\$3,400	\$2,380	\$1,020	18%	Feasibility completed CABEI is assessing a loan of \$3.6 m for both Local bank considering \$2.8 m for both
11	Coronado	Honduras	Hydro	Small-sized hydro plant to sell energy to the grid through a PPA	5,000	\$7,500	\$4,875	\$2,625	20%	Feasibility completed Local bank replaced BCIE with loan of \$1.8 m
12	Cuyamel	Honduras	Hydro	Medium-sized hydro plant to sell energy and capacity to the grid through a PPA	7,800	\$10,000	\$6,500	\$3,500	21%	Feasibility completed Initial talks with BCIE for financing BCIE considering loan of \$5m
13	Suyapa - EMCE	Honduras	Hydro	Medium-sized hydro plant to sell energy and capacity to the grid through a PPA	10,000	\$15,000	\$9,750	\$5,250	20%	Feasibility completed
14	La Gloria - EMCE	Honduras	Hydro	Small-sized hydro plant to sell energy to the grid through a PPA	5,000	\$9,000	\$5,850	\$3,150	21%	Construction starts Jan 05 BCIE considering loan of \$5m
15	San Juan - EMCE	Honduras	Hydro	Small-sized hydro plant to sell energy to the grid through a PPA	5,000	\$7,500	\$4,875	\$2,625	22%	Feasibility completed
16	Rio Peña - EMCE	Honduras	Hydro	Small-sized hydro plant to sell energy to the grid through a PPA	5,000	\$7,500	\$4,875	\$2,625	22%	Feasibility completed
17	Mezapa - EMCE	Honduras	Hydro	Small-sized hydro plant to sell energy to the grid through a PPA	4,000	\$6,000	\$3,900	\$2,100	20%	Feasibility completed
18	Texiguat - EMCE	Honduras	Hydro	Small-sized hydro plant to sell energy to the grid through a PPA	3,500	\$5,250	\$3,413	\$1,838	18%	Feasibility completed
19	Gualcarque - EMCE	Honduras	Hydro	Small-sized hydro plant to sell energy to the grid through a PPA	8,000	\$12,000	\$7,800	\$4,200	21%	Feasibility completed
20	Rio Cuyamel/ Sambo Creek	Honduras	Hydro	Small-sized hydro plant to sell energy to the grid through a PPA	2,170	\$3,255	\$2,116	\$1,139	20%	Reaching feasibility
21	Rio Cuyamel/ Santa Ana	Honduras	Hydro	Small-sized hydro plant to sell energy to the grid through a PPA	4,000	\$6,000	\$3,900	\$2,100	20%	Reaching feasibility

#	PROJECT	COUNTRY	TECHNOLOGY	DESCRIPTION	CAPACITY	COST	DEBT	EQUITY	EST.	STATUS
22	Rio Santiago	Honduras	Hydro	Small-sized hydro plant to sell energy to the grid through a PPA	4,000	\$6,000	\$3,900	\$2,100	20%	Early feasibility
23	Honduras 2000	Honduras	Wind	Wind farm to sell energy to the grid	50,000	\$60,000	\$39,000	\$21,000	17%	PPA in negotiation
24	La Grecia	Honduras	Biomass	Bagasse co-generation	12,000	\$8,400	\$5,460	\$2,940	20%	PPA is in place
25	Chumbahua BCIE considering loan of \$2.3m	Honduras	Biomass	Bagasse co-generation	20,000	\$10,000	\$6,900	\$3,100		PPA in negotiation
26	Arambala	El Salvador	Hydro	Small-sized hydro plant to sell energy to the grid through a PPA	2,500	\$3,750	\$2,438	\$1,313	17%	Feasibility completed
27	SETISA	El Salvador	EE	Energy efficiency in sugar mill	n/a	\$750	\$500	\$250	40%	
28	SETISA	El Salvador	EE	Energy efficiency in cement company	n/a	\$1,000	\$800	\$200		
29	Parriton	Costa Rica	Hydro	Medium-sized hydro plant to sell energy and capacity to the grid through a BOT with a large distributor	41,000	\$72,500	\$47,125	\$25,375	20%	Advanced feasibility
	San Joaquin Reyes	Costa Rica	Hydro	Medium-sized hydro plant to sell energy and capacity to the grid through a PPA	34,000	\$61,000	\$39,650	\$21,350	20%	Advanced feasibility
31	CoopeSan Marcos	Costa Rica	Hydro	Small-sized hydro plant to sell energy to a small rural grid	2,500	\$4,500	\$2,925	\$1,575	25%	Advanced feasibility
32	SARET	Costa Rica	Biomass	Small-sized biomass to sell energy to the local grid	4,000	\$4,000	\$2,800	\$1,200	20%	Pre feasibility
33	GeoIngenieria	Costa Rica	Biogas	2 MW biogas fueled, electric co-generation plant	2,000	\$1,740	\$1,218	\$522	24%	Pre feasibility
34	Coope Agri	Costa Rica	Energy Efficiency	Cleaner production and energy efficient coffee drying	n/a	\$400	\$300	\$100	30%	Advanced feasibility
35	Coopronranjo	Costa Rica	Energy Efficiency	Cleaner production and energy efficient coffee drying	n/a	\$500	\$350	\$150	30%	Advanced feasibility
36	Bioflame	Costa Rica	Energy Efficiency	Cleaner production and energy	n/a	\$200	\$50	\$150	30%	Advanced feasibility
37	Gemina Generator	Nicaragua	Biomass	Small co-gen plant to sell energy to a rice mill and excess to local grid	1,750	\$3,845	\$2,499	\$1,346	20%	Feasibility completed
38	Atlantic	Nicaragua	Biomass	Small plant for sale to spot market	5,000	\$4,500	\$3,375	\$1,125	n.d.	Pre-feasibility
39	Hacienda Amayo	Nicaragua	Wind	Wind farm to sell energy to the grid	20,000	\$24,000	\$15,600	\$8,400	18%	Feasibility completed
40	La Chureca	Nicaragua	Biogas	Landfill gas to energy	3,600	\$3,600	\$2,340	\$1,260	24%	Pre feasibility
41	La Cuchilla/ Bocalatun	Panama	Hydro	Medium-sized hydro plant to sell energy and capacity to the grid through a PPA	17,400	\$21,800	\$14,170	\$7,630	16%	Pre feasibility
42	Macano/ Concepcion	Panama	Hydro	Medium-sized hydro plant to sell energy and capacity to the grid	14,500	\$26,000	\$16,900	\$9,100	13%	Pre feasibility
43	San Andres	Panama	Hydro	Small-sized hydro plant to sell energy and capacity to the grid through a PPA	5,800	\$12,500	\$8,125	\$4,375	12%	Pre feasibility
44	Rio Cochea	Panama	Hydro	Small-sized hydro plant to sell energy and capacity to the grid through a PPA	6,000	\$11,200	\$7,280	\$3,920	17%	Pre feasibility
45	Los Estrechos	Panama	Hydro	Medium-sized hydro plant to sell energy and capacity to Union Fenosa through a PPA	20,000	\$26,500	\$17,225	\$9,275	20%	Pre feasibility
46	ABSA	Panama	Hydro	Small-sized hydro plant to sell energy to the grid through a PPA	1,000	\$1,500	\$975	\$525	18%	Pre feasibility
TOTALS					388,731	\$551,473	\$360,375	\$191,098		

ANNEX 8:

CAREC's Investment Brochure



The Central American Renewable Energy and Cleaner Production Facility (CAREC) es una nueva facilidad de inversión especializada en el financiamiento de proyectos y empresas de energía renovable y eficiencia energética en América Central.

CAREC es administrado por E+Co Capital, una nueva empresa del grupo E+Co (www.energyhouse.com). La facilidad de inversión de CAREC ha sido creada con la participación financiera del Fondo Multilateral de Inversiones (FOMIN) del BID, del Banco Centroamericano de Integración Económica (BCIE), de BIO (banco de desarrollo del gobierno de Bélgica) y de FinnFund (banco de desarrollo del gobierno de Finlandia).

Con una capitalización actual de US \$15 millones y una meta de llegar a US \$20 millones a más tardar en los próximos 12 meses, CAREC hará inversiones en pequeñas y medianas empresas (PYMES) mediante instrumentos novedosos y convenientes para los desarrolladores de proyectos, como son inversiones mediante acciones preferentes y deuda subordinada también conocidos como financiamiento mezanine.

Proyectos de Energía Renovable:

- Hidroeléctricas,
- Eólicos,
- Biomasa,
- Biogas,
- Geotérmicas

Eficiencia energética y producción más limpia:

- Refrigeración y aire acondicionado,
- Motores eficientes,
- Iluminación,
- Combinación de varias tecnologías,
- Reducción de desechos y desperdicios

Condiciones indicativas:

- Monto mínimo: \$250,000
Monto máximo: Hasta 15% de la capitalización total de CAREC, actualmente \$2.25 millones, una vez que CAREC alcance los \$20 millones, llegaría a \$3 millones por proyecto.
Moneda: US Dólares
Forma de pago: Flexible, a definir caso por caso según las necesidades del proyecto.
Plazos: Hasta 10 años
Costo o tasa de interés: En función del tipo de instrumento: si fuese acciones preferentes se establece un dividendo preferente; en caso de deuda subordinada, aplica un interés congruente con el perfil de riesgo de la transacción; en caso de leasing, el costo se relaciona con la rentabilidad del proyecto y su potencial de generar reducción de costos para las empresas.

Beneficios para los empresarios:

- Por su relación con E+Co, CAREC es una fuente de financiamiento que ofrece **amplia gama de posibilidades**: tipo "one stop shopping"
- En caso de acciones preferentes, **fortalece la estructura patrimonial** sin diluir a los promotores, para poder apalancar los recursos de deuda.
- En caso de deuda subordinada, permite **disponer de los activos del proyecto** para ofrecerlos en garantía a la banca comercial.
- Principalmente, se constituiría en un **socio estratégico**.
- E+Co Capital conecta con otros **servicios colaterales**: créditos de carbono, etc.
- En el caso de eficiencia energética y producción más limpia, **la facilidad financiera se adapta** a la capacidad generadora de ahorros del proyecto y su flujo de caja.

Fernando Alvarado
Chief Executive Officer



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Favor enviar su perfil del proyecto con información básica sobre el mismo, los promotores, experiencia, costo total y estructura financiera propuesta, estado de desarrollo del proyecto y etapas pendientes a la dirección de correo electrónico: fernando.alvarado@energyhouse.com

ANNEX 9:

List of Policy Barriers

ANNEX 9 - LIST OF POLICY BARRIERS IDENTIFIED BY FENERCA

Resumen de las principales barreras políticas de la energía renovable en Centro América, 2001

Honduras	Nicaragua	Panamá	Guatemala	El Salvador
<p>1. Inestabilidad de la estructura legal del sector</p> <ul style="list-style-type: none"> Las leyes y regulaciones relevantes han sufrido cambios significativos en prácticamente en cada uno de los últimos ocho años, y los desarrolladores y financistas temen que se den nuevos cambios. Posible impacto de la instalación de la Planta de AES. Preocupación por la incorporación de 15 plantas con una capacidad total de entre 140 y 160 MW a un sistema tan pequeño, podría conducir a problemas de despacho o deficiencias del recurso 	<p>1. Impuestos de Importación</p> <ul style="list-style-type: none"> Los proyectos privados de electrificación rural no están exentos de impuestos de importación Las plantas térmicas cuentan con una exención indefinida sobre la importación de combustibles. Los pequeños importadores actualmente están sujetos a la interpretación del oficial de aduanas que esté a cargo en el momento de declarar los equipos de energía renovable. 	<p>1. Tarifas de Transmisión</p> <ul style="list-style-type: none"> Muchos proyectos renovables están ubicados lejos del centro de carga que está localizado en la ciudad de Panamá, por lo que pagan costos más altos de transporte que los proyectos localizados mas cerca de los centros decarga (por ej.: proyectos térmicos). <p>2. Duración de Contratos de Compra-venta</p> <ul style="list-style-type: none"> Los procedimientos y criterios establecidos por el Ente Regulador para la contratación de energía y/o potencia establecen un plazo limite de 8 años y se especifica una penalización de 2.4% en el acto público para cada año que exceda el 4 año de contratación. Esto afecta las energías renovables porque requieren plazos más largos.. <p>3. Impuestos de importación</p> <ul style="list-style-type: none"> Los combustibles fósiles son importados libres de impuestos, lo que beneficia a las plantas térmicas y representa una desventaja competitiva para proyectos de energía renovable. <p>4. Dependencia del recurso</p> <ul style="list-style-type: none"> El efecto del Niño puede reducir la producción de una planta hidro en más del 50% durante los meses críticos de verano, haciendo necesario un balance hidro-térmico que limita la participación hidro. <p>5. Procedimientos complejos</p> <ul style="list-style-type: none"> Los procedimientos actuales para obtener concesiones para recursos renovables son largos y complejos <p>6. Altos costos de estudios de factibilidad</p> <ul style="list-style-type: none"> Muchos estudios existentes para proyectos de energía renovable requieren más trabajo de campo y estudios para llevarlos a nivel de pre-factibilidad y factibilidad, lo que consume recursos financieros importantes previo a definir la viabilidad de los proyectos. <p>7. Red de transmisión</p> <ul style="list-style-type: none"> La Provincia de Bocas del Toro, tiene un alto potencial hidroeléctrico pero requiere inversiones importantes en la red de transmisión para lograr su integración al sistema integrado nacional. 	<p>1. Restricciones en la capacidad mínima de generación</p> <ul style="list-style-type: none"> Las leyes y regulaciones limitan la entrada directa al Mercado Mayorista para generadores con capacidad inferior a 10 MW. Esto evita la venta directa al MM de los pequeños productores, y por lo tanto reduce sus opciones de venta, aunque la ley si prevé que se puede hacer la unión de varios pequeños generadores por medio de una comercializadora. <p>2. Restricciones para el traslado de los costos de contratación directa</p> <ul style="list-style-type: none"> El cálculo de tarifas se basa en los precios de electricidad según el MM, más los costos de transmisión y distribución. Los costos establecidos en contratos celebrados con los distribuidores para comprar energía no pueden ser trasladados a los usuarios. <p>3. Requisitos para permisos</p> <ul style="list-style-type: none"> La inversión en el sector de pequeña escala es obstaculizada por estructuras de costos para la emisión de permisos que no toman en cuenta el tamaño o tipo de proyecto. Como resultado, los productores de pequeños proyectos pueden terminar pagando costos mucho mayores por MW instalado que los generadores a mayor escala. 	<p>1. Restricciones en la capacidad mínima de generación</p> <ul style="list-style-type: none"> Las leyes y regulaciones limitan la entrada al MM a generadores con capacidad mínima de 5 MW. Esto evita la venta directa al MM de los pequeños productores, y por lo tanto reduce sus opciones de venta y participación. Dificultad en obtener contratos de venta de energía a largo plazo que hagan factible el desarrollo de los proyectos de energía renovable. <p>2. Requisitos para permisos</p> <ul style="list-style-type: none"> La inversión en el sector de pequeña escala es obstaculizada por estructuras de costos para la emisión de permisos que no toman en cuenta el tamaño o tipo de proyecto. Como resultado, los productores de pequeños proyectos pueden terminar pagando costos mucho mayores por MW instalado que los generadores a mayor escala. En el caso de pequeños proyectos hidroeléctricos el trámite de permisos resulta muy lento y costoso.

Resumen de barreras políticas de energía renovable en Centro América, 2003

Honduras	Nicaragua	Panamá	Guatemala	El Salvador
<p>1. Frecuentes cambios en el marco legal y sus correspondientes regulaciones</p> <ul style="list-style-type: none"> En los últimos años han habido constantes modificaciones a las leyes y los reglamentos, lo que ha limitado la institucionalización de procesos legales estandarizados <p>2. Falta de continuidad de una política de energía renovable</p> <ul style="list-style-type: none"> A la fecha no existe en Honduras una planificación energética integral que considere la participación y aprovechamiento de recursos energéticos renovables <p>3. Falta de mecanismos financieros para el desarrollo de proyectos de energía renovable</p> <ul style="list-style-type: none"> Dado el potencial existente para el desarrollo de proyectos de energía renovable a pequeña escala, es necesario desarrollar una fuente de financiamiento no convencional ajustada para este tipo de proyectos <p>4. Poca capacidad gerencial para ejecutar proyectos</p> <ul style="list-style-type: none"> Los desarrolladores de proyectos tienen buenas ideas, existe un potencial interesante; sin embargo muchos potenciales desarrolladores desconocen las fases previas para desarrollar un proyecto bancario <p>5. Excesivos procesos para tramitar los permisos y licencias</p> <ul style="list-style-type: none"> Existen diferentes procesos administrativos para la obtención de licencias y concesiones, aún a lo interno de la SERNA <p>6. Contratos de compra-venta a favor del Estado</p> <ul style="list-style-type: none"> La ENEE, al ser comprador único en el mercado, impone ciertas condiciones adversas al inversionista <p>7. Especulación de sitios para desarrollo de proyectos con fuentes renovables</p> <ul style="list-style-type: none"> La ley no brinda un máximo de solicitudes que puedan presentar los desarrolladores para identificar sitios para llevar a cabo proyectos de energía renovable 	<p>1. Falta de mecanismos financieros para el desarrollo de proyectos de energía renovable:</p> <ul style="list-style-type: none"> No están debidamente sistematizadas las posibilidades de financiamiento que existen en Nicaragua ni en Centro América, para este nicho de mercado <p>2. Riesgo de país a nivel internacional y riesgo del inversionista:</p> <ul style="list-style-type: none"> Nicaragua presenta un alto riesgo país que limita la inversión privada <p>3. Ausencia de una Ley de Incentivos para las Energía Renovables:</p> <ul style="list-style-type: none"> No existe un mecanismo legal que incentive el uso de fuentes renovables para generación eléctrica en forma general <p>4. El actual esquema regulatorio incentiva la participación de la generación térmica:</p> <ul style="list-style-type: none"> El actual esquema regulatorio ha continuado con la generación eléctrica a base de plantas térmicas, ya que éstas son de fácil construcción y además las plantas térmicas cuentan con una exención indefinida sobre la importación de combustibles <p>5. Múltiples procedimientos y organismos para la regulación, planificación y administración de los recursos:</p> <ul style="list-style-type: none"> Existen diferentes instancias para el otorgamiento de licencias y concesiones para el desarrollo de proyectos de energía renovable <p>6. Ausencia de contratos de compra-venta de energía:</p> <ul style="list-style-type: none"> No existe en Nicaragua contratos de compra-venta de energía (PPA) que permita garantizar la venta de energía, por lo que los nuevos proyectos de inversión no cuentan con una fuente asegurada de ingresos 	<p>Desigualdad de condiciones para las fuentes renovables para su participación en la generación eléctrica</p> <ul style="list-style-type: none"> la propia Ley 6 de 1997 le otorga el beneficio fiscal a las plantas térmicas de la exoneración del pago de impuestos de importación a los combustibles <p>1. Altos costos en las tarifas de transmisión</p> <ul style="list-style-type: none"> la tarifa es proporcional a la distancia del centro de carga que es la ciudad de Panamá 	<p>1. Falta de políticas de electrificación rural basadas en fuentes renovables</p> <ul style="list-style-type: none"> No existe una política y marco regulatorio integrado que incluya mini-redes rurales basadas en fuentes renovables para electrificación rural <p>2. Vacíos legales para proyectos menores de 5MW</p> <ul style="list-style-type: none"> La participación de éstos dentro del mercado eléctrico guatemalteco, no está estipulado ni el LGE ni en su Reglamento <p>3. Falta de claridad en procesos</p> <ul style="list-style-type: none"> Existe diversidad de periodos para que el Gobierno brinde su dictamen sobre los EIA presentados para proyectos de energía 	<p>1. Falta de mecanismos financieros para el desarrollo de proyectos de energía renovable</p> <ul style="list-style-type: none"> Estos proyectos tienen un periodo de maduración largo (comparado con los térmicos) <p>2. Capacidad limitada para ofrecer garantías</p> <ul style="list-style-type: none"> Activos de generación, son especializados e inmovilables, especialmente en hidráulicos

Resumen de barreras políticas de energía renovable en Centro América, 2005

Honduras	Nicaragua	Panamá	Guatemala	El Salvador
<p>1. Frecuentes cambios en el marco legal y regulatorio:</p> <ul style="list-style-type: none"> Existen constantes modificaciones a las leyes y los reglamentos del sector eléctrico que afectan de una manera directa la percepción de riesgo país de los desarrolladores de proyectos. <p>2. Falta de mecanismos financieros innovadores para el desarrollo de proyectos de energía renovable a pequeña escala:</p> <ul style="list-style-type: none"> Dado el potencial existente para el desarrollo de proyectos de energía renovable a pequeña escala, es necesario desarrollar uno o varios esquemas de financiamiento no convencionales ajustados a este tipo de proyectos. <p>3. Poca capacidad de gestión gerencial para ejecutar proyectos:</p> <ul style="list-style-type: none"> Los desarrolladores de proyectos tienen buenas ideas y el país ofrece un potencial interesante; sin embargo, muchos desarrolladores desconocen las fases previas para desarrollar un proyecto atractivo a la banca comercial. <p>4. Excesivos procesos para tramitar los permisos y licencias:</p> <ul style="list-style-type: none"> Actualmente existen diferentes procesos administrativos para la obtención de licencias y concesiones. <p>5. Especulación de sitios para desarrollo de proyectos con fuentes renovables:</p> <ul style="list-style-type: none"> La ley no indica el máximo de solicitudes que puedan presentar los desarrolladores para identificar sitios para llevar a cabo proyectos de energía renovable. 	<p>7. Falta de mecanismos financieros para el desarrollo de proyectos de energía renovable:</p> <ul style="list-style-type: none"> No existen canales de información sobre las posibilidades de financiamiento en Nicaragua ni en los mercados internacionales para este nicho de mercado. <p>8. Riesgo de país a nivel internacional y riesgo del inversionista:</p> <ul style="list-style-type: none"> Alto riesgo del país limita la inversión privada, especialmente en extranjería. De acuerdo con la legislación actual, en la operación del mercado eléctrico todo el riesgo lo asume el desarrollador, ya que el despacho se hace al mínimo costo. <p>9. El actual esquema regulatorio incentiva la participación de la generación térmica:</p> <ul style="list-style-type: none"> Las plantas térmicas cuentan con una exención indefinida sobre la importación de combustibles, lo que pone en desventaja la generación con fuentes renovables. <p>10. Múltiples procedimientos y organismos para la regulación, planificación y administración de los recursos:</p> <ul style="list-style-type: none"> Existen diferentes instancias para el otorgamiento de licencias y concesiones para el desarrollo de proyectos de energía renovable. <p>11. Ausencia de contratos para la compra-venta de energía:</p> <ul style="list-style-type: none"> El actual marco legal vigente en Nicaragua no permite los contratos de compra-venta de energía bajo la figura de PPA, sin embargo no existe prohibición a que las distribuidoras puedan contratar energía de largo plazo. 	<p>Altos costos iniciales del kilovatio instalado:</p> <ul style="list-style-type: none"> Especialmente para proyectos con hidroeléctricas y geotérmicas, en comparación con los proyectos térmicos dado el mayor tiempo que los renovables requieren para su construcción. <p>Riesgos geológicos, hídricos o eólicos:</p> <ul style="list-style-type: none"> Los proyectos de energías renovables están sujetos a los cambios climatológicos como el fenómeno del Niño y a los riesgos geológicos que muchas veces generan sobre costos no contemplados en el diseño original de los proyectos. 	<p>4. Vacios legales para proyectos menores de 5 MW:</p> <ul style="list-style-type: none"> Existe un vacío legal para proyectos menores de 5 MW, ya que la participación de éstos dentro del mercado eléctrico guatemalteco, no está estipulado en la LGE ni en su Reglamento. <p>5. Falta de claridad en los procesos:</p> <ul style="list-style-type: none"> Existe diversidad de períodos para que el Gobierno brinde su dictamen sobre los EIA presentados para proyectos de energía. <p>6. Falta de financiamiento:</p> <ul style="list-style-type: none"> La banca comercial nacional como internacional tiene requerimientos muy rígidos que no han permitido el acceso a financiamiento para proyectos de energía renovable. <p>7. Altos costos iniciales:</p> <ul style="list-style-type: none"> Los altos costos iniciales especialmente para proyectos con hidroeléctricas y geotérmicas, en comparación con los proyectos térmicos representan un factor importante por el mayor tiempo de construcción de los renovables. 	<p>3. Falta de mecanismos financieros innovadores para el desarrollo de proyectos de energía renovable:</p> <ul style="list-style-type: none"> Los proyectos de energía renovable tienen un período de maduración de largo plazo comparados con los térmicos. <p>4. Capacidad limitada de los desarrolladores para ofrecer garantías:</p> <ul style="list-style-type: none"> Los activos de generación son especialmente en proyectos hidroeléctricos, por lo que la banca comercial considera que necesitan un elevado nivel de garantía para minimizar el riesgo financiero.

ANNEX 10:

Participants to the Regional Meetings with the Energy Authorities

ANNEX 10 - PARTICIPANTS TO THE REGIONAL MEETINGS WITH THE ENERGY AUTHORITIES

Country	Participants
El Salvador	1. Ing. Jorge Rovira, General Director of Electrical Energy of the Ministry of Economy, Industry and Commerce (MEIC) (participated in 2001, 2003 and 2005)
Guatemala	2. Ing. Rudy Nájera, General Director of Energy of the Ministry of Energy and Mines (MEM) (participated in 2001, 2003) 3. Jorge L. Galindo, MBA General Director of Energy of MEM (participated in 2005)
Honduras	4. Arq. Rina Rodríguez, Energy Director (DGE) of Secretary of Natural Resources (SERNA) (participated in 2001) 5. Ing. Reiniero Zepeda, Technical Advisor of DGE/SERNA (participated, 2003) 6. Ing. Gerardo Salgado, Energy Vice-minister of SERNA (participated in 2005)
Nicaragua	7. Ing. Gioconda Guevara, Energy Policies Director of National Energy Commission (CNE) (participated in 2001) 8. Inf. Amalia López, Technical Advisor of Energy Policies Direction of CNE (participated in 2003) 9. Ing. Ernesto Espinoza, Executive Secretary of CNE (participated in 2005)
Panama	10. Ing. Michael Mihalitisianos, Executive Director of Commission for Energy Policies (COPE) (participated in 2001, 2003 and 2005)
Costa Rica	11. Ing. Gloria Villa, General Director of Energy (DSE), Ministry of the Environment and Energy (MINAE) (participated in 2001, 2003 and 2005) 12. Novelty Sánchez, Technical Advisor of DSE (participated in 2001, 2003)
Other participants	13. Zoyla Letona, Energy and Infrastructure Department, United States Agency for International Development (USAID) (participated in 2001, 2003) 14. Andres Calvo, Program Officer, United Nations Development Program (UNDP) (participated in 2001) 15. Kasper Koefoed Hansen, Program Officer, United Nations Development Program (UNDP) (participated in 2003) 16. Otto García, Regional Coordinator of Alliance on Energy And Environment between Central America and Finland (AEA) (participated in 2003) 17. Ismael Sánchez Senior Advisor of AEA (participated in 2003) 18. Teresa Bosques, Regional Coordinator of UNDP-GEF LAC Office (participated in 2003) 19. Debora Ley, Officer of Sandia National Labs (participated in 2003) 20. Jorge Rivera, Energy Advisor of the Presidential Commission on Modernization of the State (participated in 2003) 21. David Alarid, Coordinator of Environmental Center for Central America and the Caribbean, USA Costa Rican Embassy (participated in 2003) 22. Eron Bloomgarden, Officer of EcoSecurities, USA (participated in 2005)

ANNEX 11:

Financial Performance Report

ANNEX 11: FINANCIAL REPORT

FINAL BUDGET TO ACTUAL REPORT FOR THE INCREASED USE OF RENEWABLE ENERGY RESOURCES PROGRAM (FENERCA)

Contractor/Recipient: E+Co
Award No.: LAG A-00-00-00008-00
Budget for the Period: April 2000 - July 2005
Expenses as of: 30-Jun-05

<u>Line Items</u>	<u>A</u> <u>Cumulative Budget</u> <u>After 2004 Re-allocation</u>	<u>B</u> <u>Costs Incurred</u> <u>to Date as of 6/30/05</u>	<u>C = A - B</u> <u>Balance</u> <u>Remaining</u>
CA1	89,363	89,363	-
F1 - Completion of Business Plans	684,520	685,063	(543)
F2 - FI Capacity Building	162,271	162,257	15
F3 - Capacity Building Entrepreneurs	308,105	307,559	546
F4 - Next Stage Financing	540,041	540,266	(226)
F5 - Dev. Regulatory and Policy Options	321,294	321,285	9
CA8 - Facilitating Carbon Transactions	50,315	50,315	-
CA9 - Support and Capacity Building for BUN-CA	54,000	54,000	-
F6 - Program Management and M&E	460,472	460,475	(3)
F7 - New Markets	239,868	239,984	(116)
F8 - Productive Uses	145,513	145,510	3
F9 - Climate Change Activities	440,000	440,299	(299)
F10 - Business Development Support	121,837	121,828	9
F11 - Global Fenerca	142,832	141,847	985
XC1 - Off-Grid Services Manual	61,092	61,714	(621)
XC2- Carbon Manual for Entrepreneurs	22,468	23,237	(770)
XC3 - Monitoring and Evaluation Manual	20,000	19,989	11
F12 - Manual Improvement/creation	34,924	33,550	1,374
F13 - EEAF	16,400	16,400	-
Technical Assistance	167,307	152,891	14,416
Travel	567,192	562,124	5,068
Meeting Costs	188,254	150,089	38,165
Communication	91,982	92,315	(333)
Translation	45,555	30,708	14,847
Material Production	116,654	97,117	19,537
PU Prototype - building testing	61,978	34,740	27,238
Global Fenerca	188,667	188,654	13
EEAF Expenses	12,216	12,216	-
Total Operations Budget	5,355,120	5,235,793	119,327
E+Co Operational Match	(45,000)	(45,000)	-
FEDERAL PORTION	5,310,120	5,190,793	119,327
E+Co Investment Cost Share*	1,282,530	1,925,995	-
TOTAL PROGRAM	6,637,650	7,161,788	119,327

Note:

*As of June 30, 2005, E+Co has satisfied and exceeded its committed cost share amount for the FENERCA program. Total E+Co cost share amounts to \$1,970,995, of which, \$1,925,995 was in the form of Seed Capital for FENERCA sponsored projects and \$45,000 in in-kind services. An additional \$243,240 will be disbursed in another 3 FENERCA supported enterprises (Resco \$63,240; Rex \$153,000 and Fadeco \$27,000) by year end.

Breakdown of Cost Share Amount:	
Operational Match	45,000
Seed Capital Match	1,925,995
	1,970,995
Seed Capital Investments in:	
Tecnosolar in 2000	25,000
Snow Mountain in 2001	250,000
La Esperanza in 2002	250,000
Jones in 2002	50,000
Tecnosol in 2003	100,000
Jones 2 in 2003	100,000
Village in 2003	55,000
RCl in 2003	8,000
Operarias in 2003	27,000
La Esperanza in 2004	200,000
Ceramica Bandeiras in 2004	102,041
Mona 2 in 2004	100,000
Ascima in 2004	47,500
New Energies I in 2004	60,308
New Energies II in 2004	52,843
New Energies III in 2004	48,989
New Energies IV in 2004	62,298
New Energies V in 2004	23,716
Hidrosol in 2004	14,960
Solar Moveis in 2004	20,340
Tecnosol 2 in 2004	200,000
Carbo Charcoal in 2005	128,000
Total Seed Capital Match:	1,925,995

