BIOMASS ENERGY SYSTEMS and TECHNOLOGY (BEST) PROJECT

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

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ANNUAL WORKPLAN

FOR THE PERIOD FROM OCTOBER 1, 1995 THROUGH SEPTEMBER 30, 1996

RENEWABLE ENERGY AND THE ENVIRONMENT PROGRAM OF
WINROCK INTERNATIONAL
INSTITUTE FOR AGRICULTURAL DEVELOPMENT

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WINROCK INTERNATIONAL

I. PROGRAM DESCRIPTION for EXTENSION of COOPERATIVE AGREEMENT

A. BACKGROUND

USAID and the Winrock International Institute for Agricultural Development (Winrock) signed a Cooperative Agreement in September 1989 in support of Winrock's innovative integrated biomass energy activities aimed at enhancing economic opportunities in rural areas of the developing world. Winrock, through its long involvement with public and private organizations in the agriculture and forest sectors brought strong capabilities to designing, developing and managing successful activities that require creative approaches to the blending of private and public sources of funds and to the sharing of rights to technical innovations. Winrock sought to mobilize a broad base of financial support for project initiatives under the Cooperative Agreement and to target the post-harvest agricultural processing sector.

The goal of the USAID Biomass Energy Systems and Technology (BEST) Project, initiated in 1989, is to increase energy production in USAID-assisted countries and improve natural resource management by using biomass wastes for power and liquid fuel production. The purpose of BEST activities is to reduce the technical, financial, economic, and institutional risks associated with biomass energy systems in order to encourage public and private sector interests to invest in commercially-proven energy conversion systems. Winrock shares these objectives and this shared interest formed the basis for the Cooperative Agreement with USAID.

As cooperating institutions, both Winrock and USAID have contributed resources to the expansion of specific activities under a generic framework for blending private, public, and philanthropic funds. During the first six years of the Cooperative Agreement, Winrock has achieved success in establishing the technical and commercial viability of using biomass fuels to produce electricity. Most notably, from prior BEST activities, more than 200 MW of electrical capacity based on biomass cogeneration has been installed in USAID-assisted countries and major bilateral, multilateral, and private financial institutions now manage lending programs that allocate hundreds of millions of dollars for investment in biomass cogeneration systems.

Furthermore, Winrock has begun to build an institutional base through its Renewable Energy Project Support Offices (REPSOs) within target countries that can sustain and expand future impact. Field activities have helped develop linkages with important institutions in USAID client countries and have led to close collaboration with USAID field offices.

Winrock has developed close working relations with a wide range of private companies that have developed or managed commercial products relevant to the development needs of rural populations. In cooperation with private organizations like the U.S. Export Council for Renewable Energy (US/ECRE), Winrock uses its REPSOs to make the technical and commercial viability of biomass energy technologies more visible to national and multinational interests. The linkage with US/ECRE strengthens interaction with private companies that are members of the National Biomass Industries Association (NBIA).

B. NEW WINROCK STRATEGIC PLAN

Success in achieving market penetration with biomass energy systems led Winrock to establish the Renewable Energy and Environment Program (REEP) in 1991. In May 1995, Winrock's Board of Directors approved a new strategic plan that reflects Winrock's growing recognition of the critical role sustainable and reliable energy supply will play in the development of rural areas throughout the world. The new plan clearly states Winrock's motivation for emphasizing rural energy.

Growing populations and finite resources continue to challenge individuals and institutions concerned with economic development. Economic growth has not occurred anywhere in the world without an increase in per capita energy consumption. Despite well-publicized trends toward urbanization, the majority of the world's people still live in rural areas. To improve the quality of life and reduce environmental stress, additional energy services must be made available in rural areas. Biomass resources are critical resources that need more effective management.

Meeting energy demand is often considered to be a question of technology choice. *"If we only had a better gadget, we would have power too cheap to meter."* Winrock feels the primary problems of rural energy supply are political, institutional, and financial, not technical. The systems through which services are delivered will be the critical components of the needed "energy revolution" as they were critical components of the much publicized "agricultural revolution".

In keeping with its legacy, all of Winrock's programs emphasize development of local institutions and human resources. In its renewable energy program, Winrock also attempts to change policies in the energy sector by stimulating greater understanding of how sustainable energy sources can be better integrated into national and multinational development efforts. The program builds knowledge and capacity through the implementation of specific activities. In each activity, staff work to develop cooperation between government decision makers, non-governmental organizations, and private companies. We hope to create and document a set of examples where new approaches accelerate delivery of rural services and improve natural resource management.

C. PURPOSE OF COOPERATIVE AGREEMENT EXTENSION

Since the initial Cooperative Agreement was signed in 1989, dramatic changes have occurred in global energy markets. Concern about shortages of fossil fuel and the expectation of unpredictable fluctuation of prices has subsided but environmental issues associated with the burning of fossil fuel, especially greenhouse gas emissions, are receiving increased attention. In addition, government awareness of the shortage of public investment capital for the energy sector has stimulated increased interest in changing policies to attract private investment capital.

Another change in energy markets is the flat or decreasing demand for new electric capacity in the United States. With few opportunities to develop new capacity, private companies in the United States are reducing investment in research and development on new energy technologies and they are increasingly looking overseas for new markets.

The purpose of the Cooperative Agreement extension is to expand the impacts envisioned under the initial Cooperative Agreement. The success of past efforts to build cooperation between the public and private sectors has established a solid base for expanding the role biomass energy systems can play in selected countries. The combination of stable or shrinking power markets in the United States and increased international interest in private investment creates positive momentum for change and an enhanced opportunity for the joint efforts of Winrock International and USAID to achieve widely visible results.

Because of their commercial operating history, companies that process products of agriculture and forestry are often able to attract private investors. They also can be influential in shaping national policies and they generate employment in rural areas. In addition, the visibility of past successes has increased private receptivity to collaboration with Winrock initiatives. Winrock expects to achieve an additional 200 MW of installed cogeneration capacity before September 30, 1997 and the mobilization of hundreds of millions of dollars of new multilateral financing.

In addition to further expanding investment in biomass energy, Winrock also hopes to increase understanding of the positive environmental benefits that can be attained through improved management of the biomass resource base. Specifically, Winrock hopes to broadly disseminate awareness of the potential for reducing greenhouse gas emissions through improved management of natural resources including expanded production of commercial energy from biomass. In cooperation with USAID, Winrock proposes to use existing and planned U.S. government projects to document that carbon can be sequestered at low costs and to standardize methods and procedures for measurement.

Success with these initiatives will be critical to reducing concern in the developing world about the wisdom of "joint implementation" projects. Success will also be critical to attracting further private sector investment in alternative energy futures.

D. ACTIVITIES UNDER THE COOPERATIVE AGREEMENT

Under the Cooperative Agreement, Winrock will be engaged in a variety of activities. Winrock will continue its efforts to identify specific forest and/or agroprocessing industrial projects where opportunities exist for implementing profitable diversification investments that produce energy as a by-product. Winrock will screen diversification options at both prefeasibility and feasibility levels in order to stimulate and catalyze required private sector capital investments. Winrock will continue to actively seek opportunities to link the energy sector with the agricultural and forest sectors and to mobilize its extant relationships. Relationships with the private and public financial institutions, the philanthropic community, the academic community, and national utilities are of particular importance to Winrock's initiatives.

During the extension period, Winrock will make special efforts to advance investment interests by disseminating the results of its technical analyses, broadening its knowledge of local regulations in specific countries, strengthening the network of local public and private institutions in target countries, and working with financial institutions to understand what actions can be taken to reduce perceived risks.

Winrock will work primarily with proven innovations that could have major impacts in the rural areas of developing countries and, through the development of specific commercially viable projects, create environments where new approaches to innovation and technology transfer can be tested. The purpose of specific projects will be to mobilize resources from private, public, and philanthropic organizations to remove development barriers and verify impacts that can be achieved through the introduction of innovative systems. Frequently, areas of project activity will be sensitive because of their importance to rural economies and will require careful attention to institutional concerns.

E. PROJECT IMPLEMENTATION

Development and implementation of specific projects will be done in partnership with private institutions in target countries. Using local capabilities developed in Central America, Indonesia, India, the Philippines, and Brazil, Winrock will identify promising projects through competitive procurements and will share development costs with private developers. Winrock will seek to add value through the provision of technical advice and, more importantly, by working to create a supportive policy and financial environment.

For some activities envisioned under the Cooperative Agreement, Winrock will require support from external specialists. In most cases, individual specialists will be hired as consultants to meet specialized needs. Occasionally, Winrock may need to manage competitive procurements to select suitable private sector firms capable of providing required support services to the project.

Multilateral development banks exert substantial influence over public and private perception of the commercial viability of specific projects. Winrock plans to work closely with the staff at the multilateral banks to identify model projects well-suited to the operational preferences of each bank and to provide the analytical support needed to accelerate funding. Although the multilateral banks support a decreasing percentage of total global investment in the energy sector, they can effectively use their funds to attract private funding by extending repayment terms and reducing perceived risk of default.

National utilities have been the primary institutions responsible for the delivery of electricity to rural areas. In many cases, utilities have been managed to meet social or political objectives rather than the power needs of rural populations. Attempting to make power available to rural populations at prices far below the cost of production and distribution has undermined the financial viability of the utilities and decreased the reliability of power supply. Winrock plans to identify utility partners that can help demonstrate new models for meeting rural power needs.

It is expected that other organizations, private and public, as well as other divisions of USAID (e.g., G/ENV/EET, Missions, regional offices) may also wish to cooperate with activities designed under the Cooperative Agreement between G/ENV/EET and Winrock. Separate agreements will be developed for any cooperative activities.

F. EXTENSION FOR WINROCK ACTIVITIES

Under the extension of the Cooperative Agreement from March 30, 1996 until September 30, 1997, Winrock International proposes to continue five activities that will extend the impact of biomass energy systems. Some activities have been modified in response to the global changes described above. A time frame for implementing each of the major activities is provided with the activity summaries.

Additionally, the Renewable Energy Applications and Training (REAT) Project which is under the auspices of the Non-Governmental Organization/Renewable Energy Initiative (NGO/REI) Cooperative Agreement is also funding activity for activities 1,4, and 5. This support is meant to fund all activities that are not specifically focused on promoting biomass-to-energy activity.

1. Support REPSO's in Central America, the Philippines, Indonesia, India, and Brazil to identify the technical, financial, economic, and institutional barriers to the introduction of biomass energy systems and to take actions to reduce risks of project development. Cultivate model projects in collaboration with private partners. (See Activities 1a through 1e for the International REPSO Network Program Description). In addition to the specific tasks described for each REPSO, Winrock will carry out certain management tasks across the network which are included in the budget of each activity. Base-line studies will also be performed as required to provide measurable indicators of program success in each country.

2. Continue to examine new and improved cane energy technologies to assess their technical and economic utility. Continue coordination and communications with private companies active in the cane energy market to maintain current information about commercial risks and market barriers. Continue membership in the Cane Energy Network and use this Network to introduce relevant findings on new technical and commercial opportunities. Continue support for analysis of the agronomic impacts of removing cane field residues from the soil after harvest. (See Activity 2 for International Cane Energy Development Description).

3. Apply methods and procedures developed by Winrock in previous years to measure the impact of USAID forestry projects on carbon sequestration and greenhouse gas emissions. Provide technical support to the U.S. Initiative on Joint Implementation to evaluate the carbon impacts of proposed projects and to measure the impact of selected projects. Continue to refine methods and procedures to ensure they are sufficient to meet the needs of utility regulators in the United States and international oversight organizations for monitoring carbon sequestration that could result from the establishment of plantation forests in tropical areas and from the use of wood produced in such forests to displace fossil fuels (See Activity 3, Measuring Carbon Sequestration in Global Climate Change Mitigation Projects).

4. Continue work with private and public financial institutions to address concerns about the viability of investments in biomass energy systems. Winrock will work with multilateral institutions to develop innovative ways to achieve their development objectives. Winrock is particularly concerned about the shortage of capital to support adaptation of commercial technologies for the rapidly expanding energy markets in the developing world. (See Activity 4 for Description of Multilateral Development Bank Initiative).

5. Strengthen relations with national utilities in target countries to identify barriers to sale of power by biomass cogenerators and highlight new opportunities. Utilities are important institutions in developing countries. Winrock will identify capable utility partners in target countries to develop new

approaches to rural power supply. (See Activity 5 for Description of Utility Initiative).

G. ADMINISTRATIVE RELATIONSHIPS

Under the Cooperative Agreement, Winrock will use funds from USAID to cost-share development of innovative technologies with private companies and private foundations. Under separate agreements, Winrock may receive funds for similar objectives from other donors, other agencies of the U.S. Government, and other offices and field missions of USAID, as well as in-kind contributions from host country governments. Winrock may also collaborate with other USAID projects such as the Renewable Energy Applications and Training (REAT) as appropriate, and private U.S. and indigenous firms.

Under the Cooperative Agreement Winrock will continue to use staff with specialized expertise in agroprocessing industries and biomass energy production systems, agricultural and forestry systems management and research, and natural resource management. This staff will be required to carry out and/or manage the following functions:

- Technology and project screening;
- Economic and financial analysis;
- Institutional and human resource development;
- Information dissemination and public relations;
- Industrial outreach and networking;
- Investment promotion; and
- Resource assessment.

Winrock will also:

- Extend linkages with foundations, multilateral development banks, private companies, the academic community and leading world experts on agriculture, energy, environment, forestry, and natural resource management.

- Procure private sector firms to provide specialized support services.

- Maintain financial records in accordance with U.S. Government regulations.

- Use office, library and conference facilities of Winrock International as appropriate.

Winrock may seek to establish connections with other institutions via cooperative agreements or Memoranda of Understanding (MOU) to access unique

specialized expertise. Possible cooperators include institutions such as the Fundacion Solar, International Cane Energy Network, Kasetsart University, Yayasan BUL, and the Hawaiian Sugar Planters Association.

H. MANAGEMENT STRUCTURE

Winrock will manage the Cooperative Agreement under its Renewable Energy and the Environment Program (REEP). Management responsibility for the Cooperative Agreement will rest with the REEP Director.

The primary management tool of the G/ENV/EET Project Officer under the Cooperative Agreement will be the annual work plans. Winrock will provide annual workplans covering the periods October 1, 1995 through September 30, 1996 and October 1, 1996 through September 30, 1997.

Winrock will submit quarterly progress reports for the duration of the Cooperative Agreement. Winrock will submit to USAID three copies (3) of all reports prepared with funds provided under the Cooperative Agreement.

I. EVALUATION PLAN

Winrock recommends USAID evaluate results at the end of the Cooperative Agreement to determine what has been accomplished both in terms of lessons learned and recommendations for future actions. Winrock proposes the evaluation focus on five intended results:

1. No. of policy changes favorable to renewable energy in target countries/regions (Central America, Brazil, India, Philippines, Indonesia, and the Philippines),

2. Additional MW of installed biomass cogeneration capacity in USAID - assisted countries,

3. Additional capital made available in total dollar amount through multilateral institutions for investment in biomass energy systems,

4. Improvement of the quality of the documentation of carbon sequestration and greenhouse gas emissions reductions methodology to achieve more universal usage adoption in USAID-funded projects, and

5. Promoting a variety of new approaches to providing reliable rural energy supply which improve the quality of life for rural populations.

To this end, each of the project activities described earlier have a section describing measurable indicators that should be used to measure progress

towards achieving the results listed above. More specific measurable indicators and result targets will be developed through the course of the year and be reported in the quarterly reports provided to the USAID/G/ENV/EET Project Officer.

The results of the evaluation should help USAID personnel determine what future USAID roles or actions are appropriate.

The evaluation teams will need the following skills: at least one energy planner or economist; one energy engineer/agricultural engineer able to evaluate the scope and quality of projects developed under the Cooperative Agreement; one financial analyst/investment specialist knowledgeable about private and multilateral financing; and one environmental specialist familiar with the environmental issues associated with biomass energy projects.

II. ACTIVITY DESCRIPTIONS

ACTIVITY 1.a

Activity: Renewable Energy Project Support Office (REPSO) - Brazil
Country: Brazil
Budget: $425,000 **Manager:** Bill Howley

Background:

Winrock International manages an international network of Renewable Energy Project Support Offices (REPSO's) dedicated to promoting the expansion, awareness and enhanced commercialization of renewable energy technologies. REPSO's are now in place in Guatemala, India, Indonesia, and the Philippines. REPSO Brazil will be established in the planning period as the fifth in this international network. Winrock International is committed to poverty alleviation and rural development and is supportive of a long-term presence in Brazil. Activities performed by the REPSO are funded under this Cooperative Agreement and the NGO/REI Cooperative Agreement.

Over the past four years, the Winrock Renewable Energy and the Environment Program (REEP) has provided substantial technical assistance sponsored by the BEST Project in support of renewable energy in Brazil. This technical assistance has been in four principal areas: i) Collaborative Utility Exchange on Distributed Renewable Energy Applications; ii) Development of a Methodology for Quantifying Carbon Sequestered in Biomass Plantations; iii) Support for the Biomass Integrated Gasifier/Gas Turbine Project; and iv) the International Cane Energy Network.

In September, 1994 REEP, in collaboration with US/ECRE, provided briefings and documentation of these efforts and a comprehensive report of the status of renewables in Brazil and the relationship of renewables to Mission objectives. REEP has maintained regular communication with public and private sector institutions in Brazil and with U.S. counterparts, including utilities, universities, national laboratories, the World Bank/GEF, and industry.

Objective:

The objective of the REPSO Brazil is to build upon earlier technical assistance and information exchange provided by REEP to strengthen Brazil in-country capability for promotion of investment in biomass-to-energy activities. Likewise, similar activity is included under the REAT Project for the NGO/REI Cooperative Agreement for non-biomass renewable energy. Included in this objective is the facilitation of reforms to allow greater private sector investment opportunities and enhanced participation by utilities and international financial institutions.

Scope of Work:	Amount:
Task 1: Provide leadership to coordinate communication activities between US/ECRE and REEP to plan, organize and carry out uniform briefings on the status of renewables in Brazil and the relationship of renewables to Mission objectives in support of Mission request. Investigate and confirm procedures, costs and activities required to establish Winrock International Brazil Office inclusive of a Renewable Energy Project Support Office (REPSO) in-country (legal	$20,000

registration; space considerations; office start-up; equipment; etc.)

Task 2: Recruit REPSO Program Manager and key local staff. Develop a work plan for a multi-year Winrock International Brazil Office initiative incorporating: a) the establishment of a REPSO in-country with local REPSO Advisory Board; b) information dissemination and linkages between local and US players including industry, utilities, NGO's, multilateral development banks and government policy makers; and c) policy preparation and assistance. $60,000

Task 3: Provide support for development of specific projects, with emphasis on the sugar and forest product industries: a) contractor administered reimbursable cost shares for renewable energy technology pre-investment study development; b) technical services to advance specific projects; and c) assistance to formation of consortia for specific projects. $220,000

Task 4: Develop peer network for rehabilitation of degraded lands using forest plantations for energy market. This task seeks to get information developed over the years in the Brazilian forestry sector into peer-reviewed literature. Small seminars would be sponsored where papers would be presented by experts in the field and then these papers would be subjected to a peer review process. $75,000

Task 5: Technical exchange in bioenergy primarily on forest management issues. This task would build upon the past work in sustainable forestry management and could bring together American and Brazilian counterparts on this issue. The same model could be used as in Task 4 where papers are presented then subjected to peer review for publication in the literature. $50,000

Personnel: B. Howley, L. Jakeway, S. Souppaya, and E. Kennedy
REPSO Program Manager (to be hired)

Deliverables/Key Milestones: Establishment of REPSO office in Brazil, reports, briefings, work plan, cost-shared pre-investment biomass-to-energy studies, workshops, exchanges, and advisory board meetings.

Measurable Results Indicators:

1. Number of policy changes supportive of sustainable biomass energy production in Brazil as a result of REPSO activities;

2. Additional installed renewable energy capacity (MW) from biomass producing industries in Brazil;

3. Number of joint ventures and other business deals between U.S. companies and Brazilian counterparts;

4. Additional capital available through multilateral institutions for investment in biomass-for-energy systems as a measurable indication of investment capital facilitated by the program;

5. Peer network members identified in Brazil who can measure the quality and impact of carbon sequestration and greenhouse gas emissions reductions. Measuring the impact of the introduction of environmentally sound renewable energy technologies would also be a part of this endeavor;

6. Technical exchanges between U.S. and Brazilian counterparts in bioenergy topics that will lead to better quality and a variety of new approaches to providing reliable rural energy supply.

ACTIVITY 1.b

Activity: Renewable Energy Project Support Office (REPSO) - Central America
Country: Guatemala
Budget: $200,000 **Coordinator:** Ellen Kennedy

Background:

In Central America, conventional rural electrification projects and thinking will not be able to solve the severe shortage of electricity in the rural areas of the region. At the current pace of implementation, it would take about 700 years to supply central-grid electricity to more than 9,000 villages lacking such services in Guatemala alone. Moreover, available and affordable electricity is a formidable bottleneck for any development initiative in the region. Fortunately, Central America possesses significant solar, hydro, biomass, geothermal and wind resources. In order to tap these resources, a local presence is needed to heighten the awareness of decision-makers, private investors, equipment vendors and the general public of the benefits, costs, and arrangements needed to adopt these technologies in the region. In order to provide this local presence and momentum, AID/G/ENV/EET sponsored the creation of a Renewable Energy Support Office (REPSO) to be housed in Guatemala in April of 1994. Activities performed by the REPSO are funded under this Cooperative Agreement and the NGO/REI Cooperative Agreement.

Objective

The purpose of the REPSO is to identify potential renewable energy projects, promote trade and technology transfer, promote utility collaboration, and to have renewable energy technologies included in the loan portfolio of multi-lateral lending institutions providing funds for energy development projects. Management and administration of a pre-feasibility study cost-share loan program for private energy entrepreneurs is central to this activity

During the coming year, the REPSO will continue working along the three focus areas:

Scope of Work:	Amount:
Task 1: Cost Share Studies: In February 1996, the REPSO will conduct a solicitation for pre-feasibility and feasibility studies for projects using bioenergy technologies in Guatemala, under the Conjunta Centro-America USA (CONCAUSA). This will be the second solicitation that the REPSO has conducted in Guatemala, but the first from funds provided from CONCAUSA. The first cost share conducted in April of 1994, resulted in pre-investment financing awards worth $200,000 to 7 projects representing a potential 20.5 MW.	$125,000
Task 2: Market Building and Technology Transfer: The REPSO will perform the following tasks in this area: • Develop and disseminate a Renewable Energy Technology Trade Guide for El Salvador designed to assist US equipment vendors in exploring business opportunities. • Conduct a follow-up to its "Renewable Energy for Rural Development" workshop to eventually produce proceedings that can be distributed to an audience. • Facilitate a trade mission, principally targeted to representatives from bioenergy industries but also open to representatives from other renewable energy industries. The trade mission will assist these representatives with the	$55,000

identification of renewable energy technology applications, trends and projects in Guatemala and possibly other Central American countries.

Task 3: Communications: The REPSO will schedule at least two Advisory Board meetings, submit monthly "REPSO Activities" reports, bi-monthly "Renewable Energy News" reports, and weekly reports. $20,000

Personnel

Ellen Kennedy, L. Jakeway, and S. Souppaya
Country REPSO Manager: Ivan Azurdia

Deliverables/Key Milestones

Selection of renewable energy project proposals to receive preinvestment support grants
Proceedings from the "Renewable Energy for Development" Workshop
Dissemination of a REPSO Trade Guide for El Salvador
Reports

Measurable Results Indicators:

1. Number of policy changes supportive of sustainable biomass energy production in Central America as a result of REPSO activities;

2. Additional installed renewable energy capacity (MW) from biomass producing industries in Central America;

3. Number of joint ventures and other business deals between U.S. companies and Central American counterparts;

4. Additional capital available through multilateral institutions for investment in biomass-for-energy systems as a measurable indication of investment capital facilitated by the program;

5. Increase of the variety of innovative bioenergy approaches for providing reliable rural energy supply and improving the quality of life for rural populations.

ACTIVITY 1.c

Activity: Renewable Energy Project Support Office (REPSO) - India
Country: India
Budget: $205,000 **Manager**: Dan Jantzen

Background:

Winrock International, with ongoing support from USAID/G/ENV/EET, has initiated a program to expand the awareness and use of environmentally sensitive energy technologies. The platform for this program is an international network of in-country affiliates supporting the program's various activities, all aimed at encouraging potential markets for renewable energy development. Each locally managed facility is known as a Renewable Energy Project Support Office (REPSO). The India REPSO was established in early 1995. The program and staff are being gradually expanded in response to growing project support from the USAID mission in India, support from the BEST Cooperative Agreement, and support from the NGO/REI Cooperative Agreement. The support from all three sources will be used to build a renewable energy commercialization program in India which seeks to

- Commercialize high potential renewable energy technologies
- Develop renewable energy projects
- Improve access to financing and capital
- Facilitate renewable energy partnerships
- Strengthen the environment for renewable energy

Objective:

The main objective is to support the commercialization of biomass energy systems in India. In addition, the REPSO is to promote trade and technology transfer, promote utility collaboration, and to have renewable energy technologies included in the loan portfolio of multi-lateral lending institutions providing funding for energy development projects.

Scope of Work:	Amount:
Task 1: Collect data and information on existing and proposed biomass projects and enter the data in the REPSOs Renewable Energy Project Information System (REPIS).	$10,000
Task 2: Set up a cost-shared pre-investment study program in the India REPSO, solicit proposals, select winning proposals and issue agreements to support biomass projects.	$120,000
Task 3: Arrange for trade missions from India and the U.S. and support the presence of biomass industries representatives on these missions	$10,000
Task 4: Establish a REPSO advisory board and hold meetings at least twice a year.	$10,000
Task 5: Support development of potential biomass projects by providing reviews from outside consultants	$35,000

Personnel:

Renewable Energy Coordinator: to be decided
REPSO Program Manager: Mr. S. Gopinath

Deliverables/Key Milestones:

1. A functioning REPIS system in India with biomass project information entered.

2. At least two biomass-related, cost-shared pre-investment studies granted.

3. The REPSO advisory board set up and operating.

4. Participation of biomass industry representatives in Indo-U.S. trade missions.

Measurable Results Indicators:

1. Number of policy changes supportive of sustainable biomass energy production in India as a result of REPSO activities;

2. Additional installed renewable energy capacity (MW) in India from biomass producing industries;

3. Number of joint ventures and other business deals between U.S. companies and Indian counterparts;

4. Additional capital available through multilateral institutions for investment in biomass-for-energy systems as a measurable indication of investment capital facilitated by the program;

5. Increase of the variety of innovative bioenergy approaches for providing reliable rural energy supply and improving the quality of life for rural populations.

ACTIVITY 1.d

Activity: Renewable Energy Project Support Office (REPSO) - Indonesia
Country: Indonesia
Budget: $200,000 **Manager:** Todd Bartholf

Background:

Indonesia possesses significant solar, biomass, geothermal, and wind resources. The widespread use of renewable energy technologies that can utilize these resources faces major challenges in this region. Local experience and awareness among decision-makers, private investors, equipment vendors, and the general public of the benefits, costs, and arrangements needed to make these technologies work is limited. The Renewable Energy Support Office (REPSO) was established in February of 1993. The lead organization for this activity in Indonesia has been REDECON, but their efforts in promoting renewable energy technologies have been called into question. Funding for support of the REPSO is provided under this Cooperative Agreement and the NGO/REI Cooperative Agreement for non-biomass activities.

Objective

The REPSO has been established to identify potential renewable energy projects, promote trade and technology transfer, and promote utility collaboration.

Scope of Work:	Amount:
Task 1: In order to more effectively pursue the objectives of this activity, a new in-country organization will be identified to intensify the renewable energy project identification and trade and technology transfer promotion efforts in Indonesia.	$15,000
Task 2: Once a new Indonesian organization is identified to assume the role of the REPSO, the REPSO will identify private sector actors currently involved in or able to develop energy projects using renewable energy technologies. This will include private companies, municipal governments, and others as appropriate. These individuals/organizations will be invited to a workshop designed to launch a project proposal solicitation in which the REPSO will accept proposals submitted over a 45-day period. The REPSO will offer guidance in the development of these proposals during the workshop and during the solicitation period. The REPSO will then evaluate and select the strongest projects on the basis of technical, financial, and environmental merits.	$135,000
Task 3: The REPSO will develop and disseminate a Renewable Technology Trade Guide to assist U.S. project developers and equipment vendors in exploring business opportunities in Indonesia.	$25,000
Task 4: The REPSO will manage a Renewable Energy Policy Study to identify fundamental policy issues that serve as barriers to the development of markets for renewable energy technologies, and to recommend specific policy changes to lessen the negative impacts of these policies on the wider acceptance and use of these technologies as energy solutions for sustainable development.	$25,000

Personnel

REPSO Coordinator
Country REPSO Manager
Technical Assistant

Deliverables/Key Milestones

Biomass energy project proposals from cost-share solicitation
Renewable Energy Trade Guide
Renewable Energy policy study

Measurable Results Indicators:

1. Number of policy changes supportive of sustainable biomass energy production in Indonesia as a result of REPSO activities;

2. Additional installed renewable energy capacity (MW) in Indonesia from biomass producing industries;

3. Number of joint ventures and other business deals between U.S. companies and Indonesian counterparts;

4. Additional capital available through multilateral institutions for investment in biomass-for-energy systems as a measurable indication of investment capital facilitated by the program;

5. Increase of the variety of innovative bioenergy approaches for providing reliable rural energy supply and improving the quality of life for rural populations.

ACTIVITY 1.e

Activity: Renewable Energy Project Support Office (REPSO) - Philippines
Country: Philippines
Budget: $180,000 **Manager:** Todd Bartholf

Background:

The Philippines possesses significant solar, biomass, geothermal, and wind resources. The widespread use of renewable energy technologies that can utilize these resources faces major challenges in this region. Local experience and awareness among decision-makers, private investors, equipment vendors, and the general public of the benefits, costs, and arrangements needed to make these technologies work is limited. The REPSO-Philippines was created in October, 1993 with the support of USAID/G/ENV/EET. The REPSO receives funding under this Cooperative Agreement and for non-biomass renewable energy activities under the NGO/REI Cooperative Agreement.

Objective

The REPSO Project identifies potential renewable energy projects, promotes trade and technology transfer, utility collaboration, and lobbies for additional capital made available through multilateral institutions for investment in renewable energy technologies, specifically for biomass.

Scope of Work:	Amount:
Task 1: Project Identification. The REPSO will continue the project identification effort initiated in January of 1994, finalizing pre-investment financing awards worth $100,000 to several projects representing a cross-section of bioenergy technologies, and providing follow-up to project developers as they determine the project feasibility and assess project financing options. The REPSO will also conduct a second solicitation to be initiated during mid 1996. We expect several of these projects to incorporate biomass energy systems.	$135,000
Task 2: Trade Promotion and Technology Transfer. Several initiatives are planned under this task. First, the REPSO will continue to develop and disseminate A Renewable Energy Technology Trade Guide for the Philippines designed to assist U.S. equipment vendors in exploring business opportunities. Second, the REPSO will also develop "Model Project Profiles" designed to highlight renewable energy success stories in the Philippines. Third, the REPSO will coordinate a biomass trade mission to be undertaken in collaboration with the National Biomass Industries Association.	$30,000
Task 3: Utility Collaboration. The REPSO will continue its efforts to organize a Philippine Utility Renewable Energy Resource Association to provide Filipino utilities with access to information, technical assistance, project ideas, and formal exchanges with U.S. utilities.	$15,000

Personnel

REPSO Coordinator
Country REPSO Manager
Technical Assistant

Deliverables/Key Milestones

Feasibility Studies
Renewable Energy Trade Guide
Model Project Profiles
Creation of a Utility Renewable Energy Resource Association

Measurable Results Indicators:

1. Number of policy changes supportive of sustainable biomass energy production in the Philippines as a result of REPSO activities;

2. Additional installed renewable energy capacity (MW) in the Philippines from biomass producing industries;

3. Number of joint ventures and other business deals between U.S. companies and local counterparts;

4. Additional capital available through multilateral institutions for investment in biomass-for-energy systems as a measurable indication of investment capital facilitated by the program;

5. Increase of the variety of innovative bioenergy approaches for providing reliable rural energy supply and improving the quality of life for rural populations.

TIME LINE - ACTIVITY 1

Page 1

Activity	Time Frame																																							
	Oct-95				Nov-95				Dec-95				Jan-96				Feb-96				Mar-96				Apr-96				May-96				Jun-96				Jul-96				Aug-96				Sep-96			
1.0 REPSO Programs	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1.a REPSO - Brazil																																															
1.1.1 Coordinate office start-up							x	x	x	x	x		x	x	x	x																															
1.1.2 Recruit Program Manager					x				x	x	x						x				x	x																									
1.1.3 Project development support with emphasis on sugar and forest product industries																									x	x	x	x					x	x	x	x	x	x	x	x	x						
1.1.4 Peer network development																								x																	x						
1.1.5 Technical exchange in bioenergy																																x	x	x	x	x	x	x	x							
1.b REPSO - Guatemala																																															
1.2.1 Project development assistance													x	x	x	x	x	x	x	x	x	x	x	x	x	x																				
1.2.2 Market building										x	x			x	x																															
1.2.3 Communications									x	x			x				x				x				x				x				x				x				x				x			
1.c REPSO - India																																															
1.3.1 Collect data for REPIS				x			x					x				x				x				x			x				x				x				x				x				x
1.3.2 Cost shared studies															x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x					x	x	x	x				
1.3.3 Arrange Trade Missions																																									x	x	x	x				
1.3.4 Establish REPSO advisory board																	x	x	x								x																			
1.3.5 Review biomass projects																x				x				x				x				x				x				x				x				x
1.d REPSO - Indonesia																																															
1.4.1 In-country counterparts identified																					x	x	x	x																							
1.4.2 Private sector actors identified for cost share studies																									x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
1.4.3 Renewable Energy Technology Trade Guide developed																	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x										
1.4.4 Manage Renewable Energy Policy study																					x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x										

TIME LINE - ACTIVITY 1

Activity	Time Frame																																							
	Oct-95				Nov-95				Dec-95				Jan-96				Feb-96				Mar-96				Apr-96				May-96				Jun-96				Jul-96				Aug-96				Sep-96			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1.c REPSO - Philippines																																															
1.5.1 Project identification													x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x								
1.5.2 Trade promotion and technology transfer													x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x								
1.5.3 Utility collaboration																																												x	x		

ACTIVITY 2

Activity: Cane Energy Development **Manager:** L. Jakeway
Country: Global
Budget: $135,000

Background:

Over the course of the last ten years, USAID/G/ENV/EET has worked to identify opportunities for developing a new energy source with significant near-term potential for developing countries--the generation of electricity from sugarcane wastes. Over the last six years, Winrock has focused the development effort in four key areas: (1) assessing the commercial potential for using sugarcane field wastes to supplement bagasse as a boiler fuel in sugar factories; (2) channeling private sector resources by cost-sharing pre-investment studies for cane energy projects; (3) bringing together experts and potential users at the 1991 International Conference on Energy from Sugarcane to share information and identify means to overcome key technical and economic obstacles to cane energy development; and (4) establishing, in 1993, an International Cane Energy Network to coordinate the R&D and information dissemination efforts of member institutions from Brazil, Colombia, Mauritius, Reunion, Australia and USA.

Objective:

To demonstrate and commercialize energy efficient and economically successful systems to produce electric power from bagasse and cane trash at sugar mills in USAID-assisted countries.

Scope of Work:	Amount:
Task 1: Facilitate the operation of the International Cane Energy Network through coordination of annual meetings, publication of the ICEN Newsletter; and communication with member organizations.	$50,000
Task 2: Develop and test systems for collection and storage of sugarcane tops and leaves suitable for low-wage countries such as India.	15,000
Task 3: Support development of world-class sugarmill cogeneration projects by providing reviews by recognized experts of the technical and financing plans proposed for selected projects. The Simbhaoli Sugar Mill Cogeneration Project is one project being targeted.	15,000
Task 4: Support efforts to assess the "state-of-the-art" and determine the feasibility of applying high efficiency gasification and advanced gas turbine systems to produce power from bagasse in rural areas such as in India.	30,000
Task 5: Fund the cane trash removal research project in another location. The experiment in Thailand is due to be canceled because the objectives of the experiment would not be met by continuing at the current site. The purpose of this research is to determine whether cane field residues can be used as a source of fuel without degrading land productivity.	25,000

Personnel: Lee Jakeway, Dan Jantzen (REPSO - India)

Deliverables/Key Milestones:
Feasibility study of a gasification/gas turbine system suitable for India
Design of a sugar cane trash storage and collection system suitable for low-wage countries
Feasibility study of the Simbhaoli Sugar Mill Cogeneration project in India
Annual ICEN workplans, budgets and meeting minutes
Two issues of the ICEN Newsletter

Measurable Results Indicators:

1. Additional generating capacity (MW) from biomass cogeneration systems in USAID-assisted country sugarcane industries using either bagasse or cane tops and leaves;

2. Additional capital from present and new ICEN members to operate this network;

3. Increase the variety of innovative bioenergy approaches i.e. gasification/gas turbine systems to provide a reliable rural energy supply in areas such as in India.

TIME LINE - ACTIVITY 2

Activity	Time Frame																																							
	Oct-95				Nov-95				Dec-95				Jan-96				Feb-96				Mar-96				Apr-96				May-96				Jun-96				Jul-96				Aug-96				Sep-96			
2.0 Cane Energy Development	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
2.1 Facilitate operation of ICEN																																															
2.1.1 Organize and hold ICEN meeting															x		x	x	x	x	x																											
2.1.2 Produce ICEN newsletters																					x	x	x	x									x					x	x					x			
2.2 Test collection/storage systems for tops and leaves																																															
2.2.1 Travel to to India to assess operations																													x	x	x																	
2.2.2 Recommendations for/ demonstration of appropriate system																																												x		x	x
2.3 Development of sugarcane cogeneration projects																																														
2.3.1 Periodic use of outside consultants to assess projects																												x				x				x				x				x				x
2.4 Gasification systems for bagasse																																														
2.4.1 Coordinate with REPSO-India to support feasibility study																																					x	x	x	x	x	x	x	x				
2.5 Trash removal agronomic aspects																																														
2.5.1 Terminate test in Thailand, re-establish in another location									x	x	x	x																																	x	x	x	x

ACTIVITY 3

Activity: Measuring Carbon Sequestration in Global Climate Change Mitigation Projects
Country: Global
Budget: $460,647 **Manager:** Ken MacDicken

Background:

The Global Climate Change Initiative of Winrock's Renewable Energy and the Environment Program (REEP) supports the U.S. Initiative on Joint Implementation on monitoring carbon sequestration in forestry and agroforestry. This includes development of detailed plans for the monitoring of carbon in forestry and agroforestry projects funded by or conducted in collaboration with USAID missions in priority Global Climate Change countries.

Internationally accepted science has concluded that increasing concentrations of greenhouse gases will elevate atmospheric and oceanic temperatures. Reductions in the accumulation of greenhouse gases can be achieved by augmenting forest ecosystem carbon sinks. Since 1993 Winrock has responded to the increasing need to monitor the carbon impacts of land-use projects.

Objective:

Using a system of cost-effective methods and procedures, monitor and verify carbon in plantations, implement natural forest management and agroforesty projects employing commonly accepted forest inventory, and use soil science and ecological survey principles and practices to monitor carbon impacts.

Scope of Work:

This Scope of Work contains two types of activities:

1. Support to the U.S. Initiative on Joint Implementation on monitoring carbon sequestration in forestry and agroforestry, and; 2. Development of detailed plans for the monitoring of carbon in forestry and agroforestry projects funded by or conducted in collaboration with USAID missions in priority Global Climate Change countries.

Joint USIJI Tasks	Amount
Task 1: Participate in USIJI workshops in Washington, DC and San Jose, Costa Rica. to present an overview and specific technical information on monitoring of carbon in forestry projects.	$15,000
Task 2: Prepare concise guidelines for monitoring carbon in forestry for inclusion in USIJI manual.	$10,000
Task 3: Provide technical assistance on the forestry and monitoring aspects to approved USIJI projects in Costa Rica and Belize.	$25,000
Task 4: Review and evaluate monitoring component of 2nd round USIJI proposals	$10,000
Task 5: Revise and test carbon monitoring methods:	$300,000

a. Modify and test carbon monitoring methods for use in natural forests at the Nature Conservancy site in Belize and the Tropical Forest Foundation site at Cauxi.

b. Modify and test relevant portions of the plantation carbon monitoring system for use in home gardens and shifting cultivation (swidden), for ICRAF S.E. Asia Program and local institutions in Indonesia and Philippines.

c. Modify and test carbon monitoring methods (system) on community-managed forests in the Philippines in conjunction with the USAID/Manila supported activities.

d. Organize an international technical workshop with invited specialists in forest inventory, soil science, ecology, remote sensing, etc. for USIJI, Country Studies Program and CGIAR institutes.

Task 6: Provide technical assistance to approved and in-development USIJI round 2 projects. $15,000

Task 7: Conduct integrated field test of carbon methods in a single land-use at a site to be identified. $35,647

Detailed Planning Tasks $50,000

Task 1. Identification by the Center for Environment of up to 10 USAID-funded projects for carbon inventory. Preliminary discussions indicate these projects may include: BOFOR (USAID/La Paz), NRMP (USAID/Manila), NRMP (USAID/Jakarta), Alternatives to Slash and Burn sites in Indonesia and the Philippines, Tropical Forest Foundation and Forest Service sites in Brazil, USAID/Mexico GCC sites, one site under the Central Africa Regional Program for the Environment and two CIFOR benchmark sites in Indonesia. A list of project sites will be provided to Winrock International by 1 July 1995.

Task 2. A visit by Winrock staff to each project site to discuss and develop an inventory or monitoring plan for each project area. The outputs from each visit will be a plan identifying objectives, cooperating agencies and their respective roles, staffing, equipment and training needs, and a tentative schedule and budget for future field work. These site visits will be completed by December 1995.

Task 3. Preparations of an integrated plan that includes a schedule and budget for all of the selected inventory sites. This plan will be completed by March 1996 and will include the outputs from a peer- review workshop to be convened by Winrock by January 1996. Participation in this workshop will be partially funded through Winrock as part of an existing agreement with the Center for Environment. The plan will include recommendations on baseline prediction models such as the LUCS and Co-Path models as well as monitoring and verification plans such as those developed by the FACE Foundation and Winrock International.

Personnel: Kenneth MacDicken, John Kadyszewski

Deliverables/Key Milestones: Trip reports, guidelines for USIJI manual, evaluation reviews for 2nd round USIJI proposals, plans for carbon monitoring in natural forest systems, plans for carbon monitoring in agro-forestry systems, forestry/agro-forestry workshop proceedings, carbon inventory statement for a priority site, development of carbon inventory and monitoring plans of up to 10 USAID-funded projects for carbon inventory.

Measurable Results Indicators:

1. The development of technically sound methods produced and tested for measuring carbon storage impacts of forestry and agroforestry projects at the site level.

2. A minimum of 20 persons trained in at least three countries in the use of improved forest carbon monitoring methods.

3. Improved plans for the monitoring of at least three land-use projects approved under or submitted to the U.S. Initiative on Joint Implementation.

4. Detailed plans available for the monitoring of global climate change impacts of strategic USAID-funded forestry projects.

TIME LINE - ACTIVITY 3

Activity	Time Frame																																							
	Oct-95				Nov-95				Dec-95				Jan-96				Feb-96				Mar-96				Apr-96				May-96				Jun-96				Jul-96				Aug-96				Sep-96			
3.0 Carbon Sequestration and Global Climate Change	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
3.1 Support US IJI																																															
3.1.1 Participate in USIJI workshops	*Completed within budget*																																														
3.1.2 Forestry carbon monitoring guidelines																									x	x					x	x															
3.1.3 Technical assistance to USIJI projects	*Partially complete (Costa Rica)*																x					x	x																								
3.1.4 Evaluation of 2nd round USIJI proposals	*Completed under budget*																																														
3.1.5 Revise and test carbon monitoring methods (ongoing)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3.1.6 Technical assistance to approved USIJI round 2 projects																											x	x	x	x																		
3.1.7 Conduct integrated field test of carbon methods									x																												x	x	x	x	x	x	x	x				
3.2 Detailed Planning																																															
3.2.1 Identification of projects and sites by Center for Environment		*Partially complete*											x																																		
3.2.2 Visit by Winrock staff to each site						x	x							x	x	x	x	x	x	x	x	x	x	x																							
3.2.3 Preparation of integrated work plan for all sites																									x	x	x	x																			

ACTIVITY 4

Activity: Multilateral Development Bank Policy Initiative
Country: Global **Manager:** Bill Howley
Budget: $160,000

Background:

The Multilateral Development Bank Policy Initiative of Winrock's Renewable Energy and the Environment Program (REEP) works with US industry and with their international government customers to provide technical, financial, institutional and project preparatory advisory services to multilateral development banks (MDB's) to promote enhanced inclusion of renewable energy services in MDB financed projects.

Beginning in 1994, the REEP program has provided advisory services in close association with US/ECRE to several organizations in the World Bank Group: i) the International Finance Corporation (IFC) in its development of a $200 million Renewable Energy and Energy Efficiency (RE/EE) Fund for capital investments; ii) the Africa Technical Department, including the Environmentally Sustainable Development Division in promoting a Renewable Energy Strategy for Africa (RESA); iii) the Latin America/Caribbean Technical Department in promotion of inclusion of renewables for productive uses in integrated rural development loans; iv) the Asia Technical Department Alternative Energy Unit in best practices for solar home systems and in supervisory work in India for the photovoltaic subcomponent of the $450 million renewables program with the Indian Renewable Energy Development Agency; v) the Solar Initiative of the World Bank Industry and Energy Department in promotion of an overall World Bank Group renewables strategy. Since that time, numerous interactions have been made and communications maintained between REEP, bank staff and industry. REEP also provided representation for US/ECRE on the World Bank Renewable Energy Study Tour of industry sites.

In 1995/96 the program will continue to address MDB policy barriers including: i) procurement policies; ii) guidelines for specification and bid evaluation; iii) MDB internal incentive structures favoring conventional approaches to energy supply; iv) MDB/host country dialogue on regulatory reform (subsidies for conventional approaches, import duties, tariffs, restrictions, tax codes); v) hindrances to full information availability in support of the increased use of biomass and other renewable energy technologies. It should be noted that this activity is also supported by another Cooperative Agreement (NGO/REI) which supports non-biomass renewable energy ventures.

In 1995/96, follow-on briefings for World Bank task managers on each of the major renewables are planned in conjunction with industry trade associations and the Solar Initiative staff in the Industry and Energy Department and key regions. Additional technical assistance will be provided to the IFC in the development of the RE/EE Fund. Plans are also under development to assist the World Bank through REPSO collaboration in-country on inclusion of renewables in existing and planned loans and credits.

Objective:

The Renewable Energy and the Environment Program (REEP) at Winrock International has established an initiative designed to promote the incorporation of renewable energy and energy efficiency into multilateral development bank financed projects. The goal of the initiative is to address challenges to increased MDB finance of renewables through collaboration with principal decision makers within industry and the World Bank Group. The initiative is designed to enhance private sector investment opportunities in biomass and other renewable energy technologies.

Scope of Work:	Amount
Task 1: Develop proposed overall workplan, secure funding and prepare implementation plan.	$20,000
Task 2: Follow-on briefings for World Bank task managers on each of the major renewables are planned for 1995/96 in conjunction with industry trade associations and the Solar Initiative staff in the Industry and Energy Department and key regions. Design, prepare and convene renewables briefings for Africa Technical Department and Latin America/Caribbean Technical Department.	$35,000
Task 3: Provide additional technical assistance to the IFC in the development of the RE/EE Fund. Industry linkage to IFC Renewable Energy and Energy Efficiency Fund through US/ECRE and industry trade associations.	$50,000
Task 4: Plans are also under development to assist the World Bank through REPSO collaboration in-country on inclusion of renewables, particularly biomass, in existing and planned loans and credits. Provide industry linkage to the World Bank Solar Initiative fund which includes biomass.	$55,000

Personnel: Bill Howley, John Kadyszewski

Deliverables/Key Milestones: Overall workplan; two specific region briefings; project profiles and briefing materials for IFC.

Measurable Results Indicators:

1. Additional capital made available through multilateral institutions for investment in renewable energy systems with emphasis on biomass.

2. The number of biomass-for-energy projects funded by the Asian Development Bank.

TIME LINE - ACTIVITY 4

Activity	Time Frame																																							
	Oct-95				Nov-95				Dec-95				Jan-96				Feb-96				Mar-96				Apr-96				May-96				Jun-96				Jul-96				Aug-96				Sep-96			
4.0 Multilateral Development Bank Policy Initiative	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
4.1 Develop Proposed Overall Workplan				x																																											
4.2 Follow-on Briefings in Conjunction with Industry Trade Associations																																															
4.2.1 LAC Technical Department Briefing																								x																							
4.2.2 Africa Technical Department Briefing																																									x							
4.3 Provide Technical Assistance to the IFC for RE/EE Activities																																															
4.3.1 Provide technical assistance in the formation of "Market Transformation Initiatives" (ongoing)									x																																							
4.4 Assist World Bank Through REPSO Collaboration																																															
4.4.1 Identification of potential World Bank/IFC collaboration activities in-country															x	x	x	x	x	x																													
4.4.2 Provision of technical assistance through short term consultancies																				x	x	x	x	x																							

ACTIVITY 5

Activity: Utility Initiative
Country: Global
REPSO Country Focus
Budget: $255,000

Manager: Bill Howley

Background:

The Utility Initiative of Winrock's Renewable Energy and the Environment Program (REEP) links US utilities with host country counterparts to provide an exchange of technical information, training and project preparation assistance leading to enhanced inclusion of clean renewable energy resources for electricity generation.

Beginning in 1990, the REEP program facilitated a collaborative utility exchange on distributed renewable energy applications between Pacific Gas & Electric and two Brazilian utilities from Bahia State: Companhia Hidro Elétrica do São Francisco (CHESF) and Companhia de Electricidade do Estado da Bahia (COELBA). Since that time, numerous interactions have been made and communications maintained between REEP and utilities in Central and South America and Asia. In 1994 the program was expanded with the creation of a Program Officer Position to continue to link US and target country utilities in support of the increased use of biomass and other renewable energy technologies; an Advisory Board was conceived and prospective members were identified and interviewed; REPSO country activities under the utility initiative were conducted in the Philippines, Indonesia and Guatemala; one Senior Associate was retained; and a very successful International Symposium on Renewable Energy and Energy Efficiency Finance was designed, prepared and convened as a high level decision makers meeting in conjunction with US/ECRE and relevant institutions to address the role of utilities in deployment of renewables and energy efficiency with a focus on investment opportunities.

In 1995/96 the initiative will build upon successful momentum established through the creation of an "International Renewable Energy and Energy Efficiency Finance Network;" expansion of the Advisory Board and Senior Associate rosters; continued REPSO country activities under the utility initiative adding India and Brazil this year to the ongoing activities in the Philippines, Indonesia and Guatemala. It should be noted that this activity is also supported by another Cooperative Agreement (NGO/REI) which supports non-biomass renewable energy ventures.

Objective:

REEP has established an initiative designed to promote the incorporation of renewable energy and energy efficiency into the least-cost integrated resource planning efforts within the utility sector in select developing countries through capacity building and field implementation. The goal of the initiative is to link electric utilities in developing countries with interested U.S. utilities for collaboration on alternative energy supply assessments. Such collaboration will help developing country utilities compare the costs of distribution under the traditional central station utility model with the costs under a decentralized model known as the "developmental utility." The initiative is designed to enhance private sector investment opportunities in biomass and other renewable energy technologies.

Scope of Work:	Amount:
Task 1: Develop proposed overall workplan and prepare implementation plans.	$10,000

Task 2: Expansion of the Advisory Board and Senior Associate rosters; identify and recruit external experts to act in a steering capacity for REEP and the utility initiative; hold two regularly scheduled meetings per year. $30,000

Task 3: In coordination with in-country Renewable Energy Project Support Offices (REPSO's), prepare and implement specific country activities plans including information dissemination, personnel exchange and "investment grade" project preparation with focus on existing REPSO's in Guatemala, the Philippines, India, and Indonesia. Utility initiative activities are also being given primary concern in the development plans for REPSO Brazil. $125,000

Task 4: Creation of an "International Renewable Energy and Energy Efficiency Finance" Network. The intent of the network is to provide news, information, and commentary on renewable energy investment in emerging markets. Newsletters will be produced to help further this end. $30,000

Task 5: Explore possibilities for expanding the utility initiative to other USAID-assisted countries. $60,000

Personnel: Todd Bartholf, Bill Howley, Dan Jantzen, John Kadyszewski
Lee Jakeway, Ellen Kennedy (REPSO coordination)

Deliverables/Key Milestones: Overall workplan; specific country activities plans; two Advisory Board Meetings; International Renewable Energy and Energy Efficiency Finance Network report

Measurable Results Indicators:

1. Number of policies supportive of sustainable bioenergy production in REPSO established countries as a result of Utility Initiative activities.

2. Increase in rural services through means of renewable energy from biomass in terms of water supply, health, communication, education, lighting, and local industry employment for target areas.

3. Increase of the variety of innovative bioenergy approaches for providing reliable rural energy supply and improving the quality of life for rural populations.

4. Number of utility exchanges in REPSO established countries with consideration given for renewable energy from biomass.

TIME LINE - ACTIVITY 5

Activity	Time Frame																																							
	Oct-95				Nov-95				Dec-95				Jan-96				Feb-96				Mar-96				Apr-96				May-96				Jun-96				Jul-96				Aug-96				Sep-96			
5.0 Utility Initiative	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
5.1 Develop Proposed Overall Workplan																																															
5.1.1 Year one due date										x																																					
5.1.1.1 Input by subs and Winrock REPSO Mgrs.						x	x	x																																							
5.2 Expansion of the Advisory Board and Senior Associate Rosters																																														
5.2.1 Identification and recruitment of additional Sr. Associates and Board members																					x	x																								
5.2.2 Meetings (1 TBD in conjunction with UPVG meeting and 1 with Symposium)																																		x												
5.3 Prepare and Implement Specific Country Activities Plans in Coordination with REPSO																																														
5.3.1 Dialogue with REPSO Mgrs.						x																																								
5.3.2 Preparation by REPSO Mgrs. of country activity plans						x	x	x	x	x	x	x																																			
5.3.3 Start-date												x																																			
5.3.4 *Tech/Mgmt exchanges (ongoing)*																					x	x												x							x	x				x
5.4 Create an "International Renewable Energy and Energy Efficiency Finance" Network																	x																	x												
5.5 Explore Expanding Utility Initiative to Other Countries								x													x													x										x		