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**Energy Technology Innovation Project
(ETIP)
Mid-Term Contract Evaluation
Volume I - Technical Evaluation**

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Research and Development Bureau
Office of Energy and Infrastructure
Washington, D.C.

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2. It is recommended that ETIP be more active and innovative in helping to promote U.S. private sector energy/power equipment and services in developing countries.
3. It is recommended that Bechtel aggressively market the services of ETIP (under the guidance of the Project Officer) while in the field.
4. It is recommended that ETIP improve the "packaging" of the program, including a summary of ETIP's scope of work, experiences in developing countries, lists of projects completed, capabilities of subcontractors, and examples of services available. These capabilities could be better utilized if directly marketed as "services" available to Missions.
5. It is recommended that a formal mechanism for transferring lessons learned and highlighting potential project opportunities to the private sector should be developed. If not documented, this knowledge base will be lost.
6. It is recommended that enhanced communication and closer consultation between the Washington office, USAID Missions, and host government officials be undertaken to determine what national energy information is available, what the immediate national needs are, and what activities take first priority.
7. To increase Mission interest in buy-ins, it is recommended that better communication channels be established prior to the initiation of Mission-level activities. Improved communications should allow a higher level of satisfaction for the Missions while simultaneously giving the Project Officer ultimate control of the task.
8. It is recommended ETIP should expand cooperative relationships with trade organizations, other government agencies, and energy and environmental programs.

ABSTRACT

H. Evaluation Abstract (Do not exceed the space provided)

The Agency for International Development's (USAID) Office of Energy and Infrastructure (EI) within the Research and Development Bureau (R&D) plays an increasingly important role in providing innovative mechanisms and approaches for solving the growing energy and environmental crisis in USAID-assisted countries.

As major projects are developed, it is critical that USAID have the opportunity to evaluate the energy, environmental, economic and related impact(s) of the projects. USAID's intent is to determine how projects operate, what results have been achieved, and how the outcomes relate to the Office of Energy and Infrastructure's project-specific goals and objectives.

The purpose of this evaluation is to analyze achievements and shortcomings of USAID's ETIP effort relative to the Office and/or Agency expectations and current international energy and economic conditions; to examine selected individual activities within the Project and ascertain how it relates to other programs within the Office and Agency; and, to make recommendations to R&D/EI regarding the advisability and nature of activities executed under ETIP.

The issues addressed in the ETIP Mid-Term Evaluation were based on themes identified by R&D/EI. These themes, as well as others identified throughout the evaluation process, were explored through the following information sources:

- Discussions with USAID, contractor, Mission, and grantee/project user representatives who are associated with ETIP;
- Examinations of project financial and administrative records; and
- Reviews of relevant reports and publications produced through the projects activities.

In its first two years, ETIP has successfully advanced the goals and objectives laid out in the Project Paper and the Annual Program Plan. Bechtel has met the expectations as required by the ETIP core contract and delivery order (Q) contract. The program, however has shifted from the original strategy outlined in the Project Paper. This shift has kept ETIP from making a significant and sustainable impact on the energy technology choices or management techniques of any one AAC. A number of the ETIP projects such as the cogeneration projects in Thailand and the Philippines have been real successes for the program.

The overall conclusion of the ETIP evaluation is that while the program has been successful in its projects to date, that by making a few changes the Project can be significantly more efficient and effective over the next two years. The major challenge to ETIP is to effect sustainable change in the countries it which it is operating.

The key findings/conclusions/lessons learned, as a result of the ETIP mid-term evaluation are:

- Implement a comprehensive, pro-active Project strategy that is tightly focused on sustainable energy improvements having major impacts on global environmental well-being.
- Intensify the involvement of the private sector in providing energy services.
- Enhance communication and consultation linkages between R&D/EI, Mission, and host country officials.
- Expand interactions with other donor organizations so as to leverage potential cost-sharing and Project collaboration.

C O S T S

I. Evaluation Costs

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2. Mission/Office Professional Staff
Person-Days (Estimate) _____

3. Borrower/Grantee Professional
Staff Person-Days (Estimate) _____

A.I.D. EVALUATION SUMMARY - PART II

S U M M A R Y

J. Summary of Evaluation Findings, Conclusions and Recommendations (Try not to exceed the three (3) pages provided)

Address the following items:

- | | |
|--|--|
| <ul style="list-style-type: none"> • Purpose of evaluation and methodology used • Purpose of activity(ies) evaluated • Findings and conclusions (relate to questions) | <ul style="list-style-type: none"> • Principal recommendations • Lessons learned |
|--|--|

Mission or Office: R&D/EI	Date This Summary Prepared: 11/22/93	Title And Date Of Full Evaluation Report: Mid-Term Evaluation of the ETIP 11/22/93
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The purpose of the ETIP mid-term evaluation is to analyze achievements and shortcomings relative to R&D/EI, Mission, contractor, and grantee expectations relative to technical and programmatic operations; evaluate Project impact on current international energy and economic conditions; examine selected individual activities (core or buy-in) within the Project and ascertain how they relate to other programs within R&D/EI and the Agency; and make recommendations to R&D/EI regarding the viability and nature of activities executed under ETIP. Further, the purpose of this evaluation is to provide USAID managers with information about the use of project resources and to assess ETIP progress toward its development objectives. Mid-Term Evaluation findings also help USAID managers learn which project strategies and activities are most effective in varied AAC's. Finally, the information can assist USAID managers in their decision-making and accountability roles.

The achievements and shortcomings of ETIP relative to the expectations of R&D/EI, and parallel expectations of the prime contractor – Bechtel – were evaluated as were financial management practices and cross-cutting applications. The approach and methodology followed was to:

- Conduct interviews with R&D/EI, Mission staff, contractor and grantees associated with the Project and users of the Project.
- Examine financial and administrative records.
- Examine reports and publications produced through the Project.
- Consult with USAID Headquarter, field, and Project officials/managers regarding such elements as Project benefits, management practices, information transfer processes and core/buy-in task execution issues.

The approach and the methodology applied, focused on the design and execution of these tasks coupled with the implementation of pertinent Topic Guides to address a series of key questions/issues (as stipulated within the Statement of Work) that addressed for ETIP, general program effectiveness and impact, technical applications, financial sufficiency, contractor administration and staffing concerns, and the practicality of research and development cross-cutting themes.

The overall purpose of the activity evaluated was to provide both R&D/EI and Bechtel as well as Price Waterhouse with an unbiased perspective on how each of the parties has performed, how each of the parties could be more effective in executing Project requirements and managing such, how each of the parties could better communicate among themselves, what if any gaps exist in the interactive process so vital between contractors and USAID, and suggestions on how the overall core or buy-in execution process could be more effective.

The pertinent findings, recommendations and conclusions follow:

- Instead of actively pursuing a global strategy, ETIP's activities have become predominately reactive in nature. A large percentage of ETIP's staff and resources are being utilized for quick-response time sensitive activities in the NIS. Though these projects address critical needs of that region, they limit the resources available for other activities. Further, the NIS Task Force is in the final stages of securing its own energy contractor, which will result in the near-term phase out of ETIP activities in the NIS. Hence ETIP will soon move to a new phase of operation which will emphasize activities outside of the NIS.

It appears, that neither Bechtel nor USAID officials have a clear vision of how ETIP will proceed into this next phase of program work. Each has expressed a desire to become more pro-active, but no new direction has been outlined.

It is recommended that ETIP develop a pro-active strategy that focuses on a limited number of countries with specific goals and benchmarks. A comprehensive strategy, aimed at specific countries, even specific utilities, including leveraging with other donors, could make program achievements more easily identifiable and more accurately measurable. All of the present ETIP capabilities would still be available under the contract, and quick response activities would still be required on a case-by-case basis. The strategy would simply act to provide a general focus for the bulk of ETIP activities.

There appear to be three major areas of potential program refocus 1) by region; 2) by technology; or 3) by capabilities. Regionally the program should follow USAID priorities and focus on countries which could have a potentially large impact on global climate change, a large and growing energy demand, and are important to the U.S. for other foreign policy or economic reasons.

In terms of capabilities, the new strategy should incorporate all ETIP services into a tightly focused program aimed at sustainable improvements in a selected region. The resources and abilities of ETIP subcontractors should be included in the focus to offer comprehensive services.

- No strategy has been implemented to encourage private sector involvement in ETIP. The Project Paper discusses the use of trade missions to ensure private sector involvement but because NIS activities have been so time consuming, activities to promote the use of U.S. energy technology and services have been put on hold.

Additionally there is no real vehicle, other than contractor goodwill, to transfer lessons learned or potential project opportunities to the private sector. Lessons learned in Russia, Armenia, and Belerus have potential applicability to the U.S. private sector as it enters these new markets.

In light of the program's goal to introduce innovative U.S. technologies and the need for U.S. industry to become more visible in the international marketplace, ETIP should be more active and innovative in helping to promote U.S. energy/power equipment and services in developing countries.

- There is concern on the part of USAID that there are not enough Project opportunities in the pipeline to sustain the program once the NIS activities are taken over by a dedicated contractor. Bechtel does not share this concern, however, they believe that it is the Project Officer's responsibility to take the lead on marketing ETIP services.

Bechtel should not be reluctant to market the services of ETIP (under the guidance of the Project Officer) while out in the field. Face-to-face coordination is essential to discovering the needs of an AAC and to promoting the capabilities of ETIP.

- There appears to be a substantial amount of untapped opportunities for ETIP. Unfortunately there are insufficient travel funds available to the Project Officer to allow for proper promotion of ETIP's services to USAID Missions, (and it is unlikely that this situation will change substantially in the near term).

By simply improving the "packaging" of the Program, including a summary of ETIP's scope of work, experiences in developing countries, lists of projects completed, capabilities of sub-contractors, and examples of services available, an increase in Mission involvement may occur. Project promotional material should either implicitly, or explicitly incorporate ETIP's global strategy.

- Generally, Missions are satisfied that ETIP activities are undertaken with an adequate review of national energy problems, needs, and priorities, however, in at least one case (Armenia) there was a frustration that valuable funds were being used for an analysis of a problem that was already well understood and documented.

Better communication and closer consultation between the Washington office, USAID Missions, and host government officials is encouraged to determine what national energy information is available, what the immediate national needs are, and what activities take first priority.

- Mission officials want greater control and interaction with the contractors working in-country on buy-in projects. This arrangement has caused some frustration and reduced the attractiveness of the buy-in mechanism to several missions.

This problem can be overcome by establishing formal communication channels prior to the initiation of Mission level activities and increasing efforts to keep Missions apprised of ETIP buy-in activities. This arrangement should allow a balance between Project Officer control and Mission input. Keeping all parties within the communication loop will increase the attractiveness and potential effectiveness of the buy-in.

- ETIP has developed positive cooperative relationships with numerous organizations and institutions including other USAID programs such as the PSED Project, EEP, and ETP. Outside of USAID ETIP has cooperated with the World Bank, the European Bank for Reconstruction and Development and the Inter-American Development Bank.

ETIP could benefit from an expansion of these relationships to include increased cooperation with various trade organization as well as other government agencies and programs. Additionally ETIP should continue to explore opportunities for cost-sharing and collaboration in order to increase the impact of ETIP activities.

Conclusion

ETIP is providing critical, relevant, and desired services within the defined scope of activities. It is anticipated that over the course of the Project, substantial progress will be made in the introduction of innovative and environmentally benign energy technologies in the developing world. In order to make a real and sustainable change in the energy decisions of the developing world, however ETIP will need to develop a comprehensive strategy with a committed long-term approach. Bechtel has demonstrated the ability and flexibility to successfully coordinate and implement ETIP. The Evaluation Team recommends that they continue to serve this function through the remainder of their contract.

ATTACHMENTS

K. Attachments (List attachments submitted with this Evaluation Summary; always attach copy of full evaluation report, even if one was submitted earlier; attach studies, surveys, etc., from "on-going" evaluation, if relevant to the evaluation report.)

See attached final ETIP mid-term evaluation report.

COMMENTS

L. Comments By Mission, AID/W Office and Borrower/Grantee On Full Report

TABLE OF CONTENTS

	<u>PAGE</u>
EXECUTIVE SUMMARY	i
1.0 INTRODUCTION	1-1
1.1 Purpose of the Mid-Term Evaluation	1-1
1.2 Methodology	1-1
1.3 Project Background	1-3
2.0 ETIP STRUCTURE AND ACTIVITIES	2-1
2.1 Overall Project Structure	2-1
2.2 Activities Currently Underway/Completed to Date	2-2
2.3 Description of Activities	2-3
2.4 Delivery Orders -- Buy-In Activities	2-4
3.0 KEY FINDINGS	3-1
3.1 Project Goals	3-1
3.1.1 Shift in Project Focus	3-1
3.2 Core Activities	3-4
3.2.1 Contractual Issues	3-4
3.2.2 Information Dissemination and Identification of Opportunities	3-5
3.3 Buy-In Activities	3-6
3.4 Administration and Staffing Issues	3-7
3.4.1 Core Staff Effectiveness	3-7
3.4.2 Communication Channels	3-8
3.4.3 Administration of Invoices and Deliverables	3-8
3.5 Cross-Cutting Themes	3-8
3.5.1 ETIP Relationship with Other Programs	3-8
3.5.2 Private Sector Involvement	3-9
3.5.3 Subcontractors	3-10

TABLE OF CONTENTS (CONT.)

	<u>PAGE</u>
3.6 Impacts of ETIP	3-10
3.6.1 Increased Capacity and Efficiency of Power Generation, Transmission and Distribution	3-11
3.6.2 Environmental and Quality of Life Impacts	3-11
3.6.3 Gender, Socioeconomic, and Cultural Issues	3-12
3.6.4 Economic Impacts	3-13
4.0 ENERGY PROJECT DEVELOPMENT FUND	4-1
4.1 History of the Fund	4-1
4.2 Activities of the Fund	4-2
4.3 Key Findings	4-4
4.3.1 EPDF Public Outreach	4-4
4.3.2 EPDF Administration and Management	4-5
4.3.3 EPDF Application Form	4-6
4.3.4 Application Review Process	4-6
4.3.5 EPDF Funding Process	4-7
4.3.6 Communication Issues	4-8
4.3.7 Overall Strategy and Effectiveness of the Fund	4-8
5.0 CONCLUSIONS AND RECOMMENDATIONS	5-1
5.1 Overall Assessment	5-1
5.2 Findings and Recommendations	5-1

LIST OF APPENDICES

Appendix A - Mid-Term Evaluation Scope of Work	A-1
Appendix B - Interview Respondent List	B-1
Appendix C - Documents Reviewed	C-1
Appendix D - Topic Guides	D-1
Appendix E - ETIP Program Plan and Accomplishments Summary	E-1
Appendix F - Status of Nine Active EPDF Projects	F-1
Appendix G - EPDF Brochure	G-1
Appendix H - Information and Application Packet for the Energy Project Development Fund	H-1
Appendix I - Sample Letters to EPDF	I-1
Appendix J - EPDF Application Evaluation Form	J-1

EXECUTIVE SUMMARY

The Agency for International Development's (USAID) Office of Energy and Infrastructure (EI) situated within the Research and Development Bureau (R&D) has engaged DynCorp•Meridian (Meridian) to serve as a third-party evaluator of the Energy Technology Innovation Project (ETIP). ETIP, initiated in the spring of 1990, operates primarily through two support contractors. Bechtel Corporation (Bechtel) was competitively awarded the Technical Assistance Prime Contract in August 1991, and Price Waterhouse was competitively selected to manage a Project Identification Fund in September 1990.

ETIP's broad goal is the alleviation, by environmentally acceptable means, of the supply/demand gap in energy sectors of developing countries. ETIP's contribution to this goal is through the introduction of innovative and environmentally benign U.S. energy engineering technologies and management techniques that promote sustainable and cost-effective operation of electric generation, transmission, and distribution systems.

Purpose

This evaluation is intended to provide USAID managers with information about the use of project resources and to assess ETIP progress toward its development objectives. Mid-Term Evaluation findings communicate to USAID managers lessons learned about the kinds of project strategies and activities that are most effective. In addition, the information can assist USAID managers in their decision-making and accountability roles.

Methodology

The issues addressed in the ETIP Mid-Term Evaluation are based on themes identified by R&D/EI and conveyed to Meridian by means of the statement of work for this Mid-Term Evaluation. These themes, as well as others identified throughout the evaluation process, were explored through the following information sources:

- Discussions with USAID, contractor, Mission, and grantee/project user representatives who are associated with ETIP;
- Examinations of project financial and administrative records; and
- Reviews of relevant reports and publications produced through the project's activities.

This Mid-Term Evaluation is presented in two volumes. The **Technical Evaluation** (Volume I) as herein presented, covers the project from the perspective of background, context, objectives, direction, implementation activities, administration, staffing, buy-ins, and impacts. A **Financial Review** is provided as Volume II, which covers contractor management and

accounting procedures, billing practices, and general compliance with USAID regulations and Office of Management and Budget requirements.

Findings and Recommendations

Through the mid-term (2 years) of the ETIP core contract, Bechtel has satisfactorily fulfilled a majority of the tasks proposed during the life of the contract (5 years) and is well on its way to meeting the projected mid-term accomplishments listed in the ETIP Project Paper. ETIP has effectively advanced the goals and objectives laid out in the Project Paper and the Annual Program Plan. The Project, however, has shifted from the original strategy outlined in the Project Paper. Following the break-up of the Soviet Union, at the request of the NIS Task Force within the Office of Energy, Environment, and Technology (NIS/TF, EET), the focus of ETIP was broadened to address the immediate needs of the Newly Independent States (NIS). This shift has kept ETIP from making a significant and sustainable impact on the energy technology choices or management techniques of any one USAID-assisted country. A number of the ETIP projects, such as the cogeneration projects in Thailand and the Philippines, have been real successes for the program.

The overall conclusion of the ETIP evaluation is that although the program has been successful in its projects to date, by making a few changes ETIP can be significantly more efficient and effective over the next 3 years. The major challenge to ETIP is to effect sustainable change in the countries in which it is operating. The following findings and recommendations are submitted for USAID consideration. These recommendations are specifically aimed at improving the efficiency and responsiveness of ETIP as it seeks to alleviate, by environmentally acceptable means, the energy shortfalls in the developing world. In a general sense, broader lessons learned can be extrapolated to improve the efficiency and effectiveness of other USAID programs.

1. Instead of actively pursuing a global strategy, ETIP's activities have become predominately reactive in nature. Well over 50 percent of ETIP's staff and resources are being utilized for quick-response time sensitive activities in the NIS, activities that will slowly level off after the NIS Task Force signs on its own dedicated contractor. Neither Bechtel nor USAID officials have a clear vision of how ETIP will proceed into this next (post-NIS) phase of program work.

The Evaluation Team recommends ETIP revisit the objectives and program elements outlined in the Project Paper and develop a pro-active and comprehensive strategy that focuses on countries which have a potentially large impact on global climate change, a large and growing energy demand, and which are important to the United States for other foreign policy or economic reasons.

In terms of capabilities, the new strategy should incorporate all ETIP services into a tightly focused program aimed at sustainable technical and institutional strengthening in a targeted region. The inclusion of all subcontractors' capabilities within this strategy is recommended.

2. No strategy has been implemented to encourage private sector involvement in ETIP. The Project Paper discusses the use of trade missions to ensure private sector involvement, but because NIS activities have been so time consuming, activities to promote the use of U.S. energy technology and services have been put on hold.

It is recommended ETIP be more active and innovative in helping to promote U.S. energy/power equipment and services in developing countries.

3. USAID is concerned that not enough Project opportunities exist in the ETIP pipeline to sustain the program once NIS activities slow and are taken over by a dedicated contractor. Bechtel does not, however, share this concern. Bechtel believes that it is the Project Officer's responsibility to take the lead on marketing ETIP services.

Bechtel should not be reluctant to aggressively market the services of ETIP (under the guidance of the Project Officer) while in the field.

4. Missions are not aware of the variety of services that ETIP provides. For example, several missions were familiar with ETIP's mission and overall goals, but were unaware of the specific services available to them. Many Missions were confused about the differences between ETIP and PSED and viewed them as the same program. Improving mission awareness about ETIP is increasingly important as the NIS activities come to a close.

The Evaluation Team believes ETIP should improve the "packaging" of the program, including a summary of ETIP's scope of work, experiences in developing countries, lists of projects completed, capabilities of subcontractors, and examples of services available. These capabilities could be better utilized if directly marketed as "services" available to Missions.

5. There is no clearly defined mechanism for documenting lessons learned for wide spread usage in the public sector. Bechtel is learning many lessons under ETIP which are invaluable to the private sector in introducing innovative and environmentally benign U.S. technologies into the NIS and the developing world.

A formal mechanism for transferring lessons learned and highlighting potential project opportunities to the private sector should be developed. If not documented this knowledge base will be lost.

6. Mission officials want greater control and interaction with the contractors working in-country on buy-in projects. This arrangement has caused some frustration and reduced the attractiveness of the buy-in mechanism to several missions.

This problem can be overcome by establishing formal communication channels prior to the initiation of Mission level activities and increasing efforts to keep

Missions appraised of ETIP buy-in activities. This arrangement should allow a balance between Project Officer control and Mission input. Keeping all parties within the communication loop will increase the attractiveness and potential effectiveness of the buy-in.

7. ETIP has developed positive cooperative relationships with numerous organizations and institutions including other USAID programs such as the PSED project, the Energy Efficiency Project, and the Energy Training Program. Cooperation outside of USAID has included the World Bank, the European Bank for Reconstruction, and the Inter-American Development Bank.

We recommend ETIP expand cooperative relationships with trade organizations, as well as other government agencies and energy and environmental programs.

8. The public sector window of the Energy Project Development Fund (EPDF) has received only three applications and has funded only one study. These disappointing results are related to a variety of circumstances, mainly (1) no monies were available through the public window until September 1992, (2) the amount of total funding available was extremely low (\$276,195), (3) Bechtel has no contractual relationship with the fund, and 4) the public sector window did not receive promotional support in the early stages of its development. Unfortunately, funding for the public windows of EPDF is nearly exhausted. Recent applications as well as those well into the pipeline account for more money than is available through the end of the current project. This assumes no new infusions of funds to the EPDF, which is the position that Price Waterhouse is currently operating from.

We do not recommend, therefore, any increased activity in the area of marketing or information dissemination. If additional funding and a new contract for the EPDF are instituted, we recommend a more aggressive information dissemination process. In particular, the EPDF half-day seminars were perceived as extremely beneficial and they resulted in numerous applications for funding. Also, a more targeted approach to marketing, through contacts made in PSED and ETIP activities, would be appropriate.

Conclusion

ETIP is providing critical, relevant, and desired services within the defined scope of activities. It is anticipated that over the course of the Project, substantial progress will be made in the introduction of innovative and environmentally benign energy technologies in the developing world. In order to make a real and sustainable change in the energy decisions of the developing world, however, ETIP will need to develop a comprehensive strategy with a committed long-term approach. Bechtel has demonstrated the ability and flexibility to successfully coordinate and implement ETIP. The Evaluation Team recommends that they continue to serve this function through the remainder of their contract.

1.0 INTRODUCTION

The United States Agency for International Development's (USAID) Office of Energy and Infrastructure (EI) situated within the Research and Development Bureau (R&D) has engaged DynCorp•Meridian (Meridian) to serve as a third-party evaluator of the Energy Technology Innovation Project (ETIP). This Mid-Term Evaluation has been conducted in accordance with USAID policy concerning the monitoring and evaluation of development assistance projects.

1.1 Purpose of the Mid-Term Evaluation

The key purpose of this evaluation is to provide USAID managers with information about the use of project resources and to assess ETIP progress toward its development objectives. Mid-Term Evaluation findings also help USAID managers learn about the kinds of project strategies and activities that are most effective. Finally, the information can assist USAID managers in their decision-making and accountability roles. The latter is particularly important for USAID efforts to gain greater flexibility from Congress in programming assistance.

The ETIP Mid-Term Evaluation has been based on several information sources:

- Discussions with USAID, contractor, Mission, and grantee/project user representatives who are associated with ETIP;
- Examinations of project financial and administrative records; and
- Reviews of relevant reports and publications produced through the projects activities.

1.2 Methodology

The Scope of Work (SOW) prepared for this evaluation, included as Appendix A, established a list of issues which were to be addressed by this evaluation. These issues were framed as a series of questions which taken as a whole, formed the practical basis for the evaluation. The methodology established for the evaluation followed a logical, sequential path as described below.

Although a variety of information sources were consulted for this effort, the primary source was a series of interviews with ETIP participants and stakeholders. During the evaluation project kickoff meeting with key R&D/EI personnel the list of interviewees was established. These included technical, financial and administrative personnel at USAID (headquarters and Missions), the technical assistance Contractor and sub-contractors, the Fund Contractor and Fund users. Virtually all persons on this list, or suitable alternates, were contacted during the interview process. Additional names were added as required. A complete listing of respondents is given as Appendix B. Relevant background materials on ETIP as well as R&D/EI were identified, assembled, and reviewed throughout the evaluation process. Documents reviewed are listed in Appendix C.

The SOW questions and the background material were used to develop "Topic Guides" that set forth the series of questions used during each interview. Topic Guides offered a means of logically grouping questions to make for a comprehensive interview. In addition, they maintained consistency of coverage among interviews and provided a beginning point for explanatory discussions of key issues. Four separate sets of Topic Guides were developed based on the general category of interview respondent: (1) technical (2) administrative, including Energy Project Development Fund (EPDF) users, (3) Project users/Missions, and (4) financial. The Topic Guides developed for the ETIP Mid-Term Evaluation are attached as Appendix D.

Interviews were conducted during a 2-month period. These focused on each respondent's experiences with and perceptions of the project. In general, respondents were interviewed individually, a practice that tends to enhance the free flow of information. On occasion, respondents preferred a group interview. Wherever feasible, in-person interviews were conducted. For respondents located outside of the Washington, DC area, interviews were conducted by telephone. All members of the Evaluation Team participated in the interview process. No field visits were made by the Evaluation Team.

During the interview period, both formal and informal meetings were held among the Evaluation Team. These meetings served to share findings, identify themes and issues, and monitor progress of the interviews. At the culmination of the interview period, several intensive meetings were held to develop the establish the final report outline, themes, issues, and recommendations. Report preparation followed, including internal reviews of a conceptual and an interim draft.

The Mid-Term Evaluation is presented in two volumes. The **Technical Evaluation** (Volume I) as herein presented, covers the project from the perspective of background, context, objectives, direction, implementation activities, administration, staffing, buy-ins, and impacts. A **Financial Review** is provided in Volume II. This covers contractor management and accounting procedures, billing practices, and general compliance with USAID regulations and Office of Management and Budget requirements.

The Technical Evaluation is divided into five sections. Section 1 provides the introduction, including the purpose of the report, methodology and project background. Section 2 describes the ETIP structure and activities. Section 3 presents the key findings of ETIP and offers recommendations, where appropriate. Section 4 covers the background, key findings, and recommendations for EPDF, a separately managed component of ETIP. Finally, Section 5 presents the major conclusions and recommendations of the Technical Evaluation Team.

The Financial Review, which was prepared as a stand-alone document, is composed of three sections, including an introduction and background, the financial review, and key findings. The Financial Review is intended to serve as a general assessment of the financial and contractual procedures of the Project. It is not, however, a formal audit.

1.3 Project Background

ETIP was initiated by USAID in the Spring of 1990. The Project Paper outlined project operation primarily through two competitively bid contracts, one for Technical Assistance, the other to manage a Project Identification Fund.

ETIP's broad goal is the alleviation, by environmentally acceptable means, of the supply/demand gap in energy sectors of developing countries. ETIP's contribution to this goal is through the introduction of innovative and environmentally benign U.S. energy engineering technologies and management techniques that promote sustainable and cost-effective operation of electric generation, transmission, and distribution systems.

The ETIP Project Paper and the core contract established the primary objectives of the program as: (1) implementation of clean energy technologies; (2) innovation in energy efficiency and power generation, transmission, and distribution; (3) technology transfer to rehabilitate current systems; and (4) improvement of power sector institutional structures.

These objectives are to be satisfied by funding: engineering services and the introduction of innovative, proven, efficient, and environmentally benign advanced U.S. energy conversion technologies; the implementation of energy system control and management techniques; technology transfer/training and workshops at management and staff levels; and assessments of indigenous energy resources and energy system applications.

Specific technologies and methodologies are to be chosen based on a country specific basis for: their applicability to indigenous resources; the improvement of existing systems throughout the power sector; minimum impact on the environment; and economic sustainability to the specific conditions in the developing country.

The Project Identification Fund was designed to complement the program by issuing subcontracts to U.S. firms to conduct prefeasibility studies and other project planning services (e.g., resource assessments, definitional missions, and workshops).

2.0 ETIP STRUCTURE AND ACTIVITIES

2.1 Overall Project Structure

The ETIP Technical Assistance Prime Contract was competitively awarded to Bechtel in August 1991. Both a core contract and a "Q" (buy-in) contract were signed. Bechtel's responsibilities under these contracts are divided into the three following areas:

1. Washington Support - including provisions for project and activity planning support; technical support; administrative support; liaison with Bechtel's corporate headquarters, USAID field missions, industry representatives, international organizations; and, organization of field activities.
2. Field Support - for the "contract activities" outlined below.
3. Contract Activities - encompassing those technical assistance activities that fall within the following range of activities:
 - Country indigenous resource assessments
 - Country energy system applications and/or market assessments
 - Definitional missions
 - Missions for management/operational assistance workshops for institutional development
 - Special studies (e.g., financial assistance programs, rural impact assessments, social cost examinations, or macro-level socioeconomic studies)

The ETIP Project Paper defines two additional areas of activity:

- Prefeasibility Studies
- Technical Assistance to Provide New, Innovative Engineering Services to the Energy/Power Sector

Although its corporate headquarters are in San Francisco, Bechtel has established an ETIP office at 1601 North Kent Street in Arlington, VA. The ETIP Project Officer, also located at this location, interacts daily with ETIP managers. The ETIP office serves as the focal point of project activities. Core contract activities are administered through this office. In addition, the ETIP project office is responsible for coordination and oversight of buy-in activities that are staffed by non-core Bechtel and subcontractor personnel, and operated through other offices (e.g., Houston). ETIP core staff also are actively involved in development of buy-ins.

In September of 1990, Price Waterhouse was awarded the contract to administer the Private Sector Energy Development Fund which complements the Private Sector Energy Development (PSED) Project. An August 1991 delivery order to this contract added an ETIP window to the Fund, which has since been reconfigured into the Energy Project Development Fund (EPDF). A complete discussion of EPDF is provided in Section 4.

2.2 Activities Currently Underway/Completed to Date

In general, ETIP activities have been well received. Bechtel has received high marks for contract performance from Missions as well as from USAID oversight and administrative personnel. Bechtel has conducted activities under all areas of the contract. ETIP projects have involved the countries of Thailand, Indonesia, the Philippines, Armenia, India, Egypt, Israel, Dominican Republic, Guatemala, Panama, Mongolia, and the NIS.

Table 2-1 summarizes project activities tallied by category and compared with mid-term projections and goals as specified in the core contract and Project Paper. This table, summarized from material provided by Bechtel, includes activities conducted under both the core and Q contracts. Much smaller estimates are also provided in the contract with no indication of the period that the estimates covers. In some cases, the activities appear to be a weak fit for the category in which they are placed. There is a broad variation in anticipated accomplishments set forth in these two documents. The core contract estimates a surprisingly low level of activity over the 5-year contract period.

Activities under the core and Q contracts must be approved by the Project Officer. In general, these activities result from requests by USAID Missions and other groups such as the NIS Task Force. Hence, Bechtel has limited control over the contract activities undertaken, as well as the progress toward guidelines established in the Project Paper. It should be noted that the project accomplishment goals given in Table 2-1 are estimates, not firm contractual requirements. The Annual Program Plan for ETIP, which lists Planned Accomplishments, gives a more directed set of near-term objectives (Appendix E).

Bechtel has met or is in process of fulfilling most of the activities outlined in the Annual Program Plan for FY 1992-1993. It also appears that Bechtel is close to the Project Paper numerical mid-term goal expectations as given in Table 2-1. Fulfillment of the numerical goals by the end of the contract period appears to be well within reach. A brief discussion of the types of projects undertaken in each category follows.

Activity Category	Project Accomplishments (Completed or in Progress by Sept. 1993)	Bechtel Core Contract	Project Paper Projections	
			Mid-Term FY 90-92	10-Year Life-of-Project
Indigenous Resource Assessments	5	2	10	20
Energy System Applications/Market Assessments	6	2	6	15
Prefeasibility Studies	6	n/a	7	25
Technical Assistance/Technology Transfer	13 (1 workshop)	9	8	25
Management/Operational Assistance Workshops for Institutional Development	6 (no workshops)	n/a	6	20
Technical Assistance Missions	14 (no trade missions)	n/a	9	25
Special Studies	13	5	7	30
Feasibility Study Fund Coordination and Technical Evaluations	3 (reviewed) 1 (awarded)	n/a	n/a	25

2.3 Description of Activities

Indigenous Resource Assessments -- Resource assessments are conducted to determine the potential for development and utilization of particular technology options. Resource assessments are critical in selection of new innovative technology alternatives that take advantage of a nation's indigenous resources. To date, ETIP has conducted energy and resource assessments for two countries -- Thailand and Indonesia. ETIP is currently in the process of assessing the potential of developing indigenous coal, oil, and gas resources in Armenia and developing fuel and energy assistance programs. In a related effort ETIP assessed the capabilities and competitiveness of U.S. environmental technologies.

Energy System Applications/Market Assessments -- In Armenia ETIP assessed in-country manufacturing capabilities to produce home heating/cooking stoves. Additionally, ETIP prepared energy assessments of seven NIS republics and South Africa. In Asia ETIP evaluated

export markets for power generation equipment in India, Pakistan, Nepal, Sri Lanka, and Bangladesh.

Prefeasibility Studies -- Prefeasibility studies are used to determine the technical, economic, financial, legal, and institutional viability of project opportunity. ETIP has conducted financial and technical feasibility studies in Thailand and Indonesia.

Technical Assistance/Technology Transfer -- This program component was designed to focus on missions to countries to examine and characterize the energy sector, determine what technologies are appropriate, and proceed with technology transfer activities. Currently, ETIP is in the process of a natural gas and natural gas liquids flaring project in the NIS that includes an international workshop on gas flaring, an assessment of four cities' gas distribution systems, and an assessment of the role of gas in space heating for cogeneration. ETIP has also provided program support to USAID's Energy Training Program for NYMEX commodities training program.

Management/Operational Assistance Workshops for Institutional Development -- Under this component ETIP has provided technical support for increasing private sector participation in the Russian, Philippine, and Dominican Republic power sector; assisted in the preparation of an NIS emergency loan; evaluated potential application of used steam turbines in Panama; and conducted an institutional assessment for Russian gas utilities.

Technical Assistance Missions -- ETIP provides a range of technical assistance services, primarily to host country power/energy end-users. To date, ETIP has provided commodities procurement planning support to the NIS Task Force; developed and located U.S. sources of generation equipment for emergency supply to Guatemala; evaluated biomass use in Egypt; and conducted a technical and financial feasibility study of a Thai cogeneration project. ETIP is currently in the process of planning a reverse trade mission to Thailand for IGCC and is developing city-specific natural gas demand forecast model for NIS.

Special Studies -- This component was designed to include studies of potential financing assistance programs, rural impact assessments, social costs examinations, or macro-level socioeconomic studies. Over the past year and half ETIP has conducted an Assessment of current and projected natural gas usage in USAID-assisted countries; performed a preliminary survey of liquified natural gas vehicle use for potential Thai applications; developed an application and marketing plan for the EPDF; and evaluated three project finance models for conversion to private power/cogen project finance model.

2.4 Delivery Orders -- Buy-In Activities

To date ETIP has had four delivery orders (buy-ins) under the Q contract with obligations totaling approximately \$4.4 million. This represents a very high level of buy-in activity in comparison to other Q contracts.

- Delivery Order 1 -- Private Power Development in the Philippines -- ETIP provided technical support to the Philippines National Power Corporation to

increase private sector participation in the power supply industry. Funding of \$258,000 was provided through the USAID Philippines Mission. The final report for this project was issued in July 1992.

- Delivery Order 2 -- Pre-Loan Assessment of the Hrazdan Power Plant - Unit No. 5 -- ETIP conducted an assessment of design and construction status, and identified actions, costs, and time requirements for the completion of this Armenian power plant. Funding of \$450,000 was provided through the USAID NIS Task Force. The Final Draft Report was issued in December 1992.
- Delivery Order 3 -- Natural Gas and Oil Pipeline and Coal Technology Improvement/Upgrading and Natural Gas Atmospheric Emissions Control -- The following eight subtasks are included under this buy-in:
 1. Natural gas pipeline system selection and performance/condition testing.
 2. Natural gas pipeline system performance improvement and upgrading engineering.
 3. Natural gas pipeline system economic feasibility assessment.
 4. Natural gas pipeline system financing approach development.
 5. NIS natural gas pipelines industrial capabilities assessment.
 6. Natural gas operations atmospheric emissions reduction strategy development.
 7. Oil pipeline and oil products pipeline selection.
 8. Coal technologies improvement/upgrading opportunities assessment.

Funding of \$1.9 million was provided through the USAID NIS Task Force. This project is currently active.

- Delivery Order 4 -- Reconstruction of Gas Distribution Industry in Russia -- This task is being done under a \$1.7 million buy-in from the NIS Task Force. This project will provide critical inputs into the development of strategies for reconstruction of the gas distribution industry in Russia over the next 5 years in the following four cities: Ryazan, Voronezh, Saratov, and Volgograd. Potential distribution systems investments to be considered by the World Bank may total approximately \$200 million for the four cities.

3.0 KEY FINDINGS

The Energy Technology Innovation Project is providing a valuable and relevant service to developing countries. Although lacking in quantifiable indicators, the program has produced significant progress in a relatively short span. ETIP is perceived as being responsive to Mission needs and Bechtel's performance (despite some recent problems) has established a confidence factor that is likely to lead to a significant demand for their services. Over the last year, however, the program has focused almost 75 percent of its time on the NIS, though this work will be tapering off during the coming months. This opens up a variety of issues concerning program strategy and worldwide mission awareness that will be discussed below along with a review of administrative and staffing issues, ETIP's relationship with other programs and private sector involvement. The key findings of the this Mid-Term Evaluation are discussed in this section. Where appropriate, alternatives or recommendations for enhancing the effectiveness of ETIP are described.

3.1 Project Goals

The goals of ETIP are laid out in three principal documents, the ETIP Project Paper, the core contract awarded to Bechtel, and the Annual Program Plan. The Evaluation Team found that the perception of the goals by the contractor and the United States Agency for International Development's Office of Energy and Infrastructure in the Research and Development Bureau accurately reflect the intentions as presented in these documents.

3.1.1 Shift in Project Focus

ETIP was originally designed to respond to power shortfalls and environmental degradation in the developing world through the introduction of innovative technologies, energy efficiency improvements, and conservation. The ETIP Project Paper indicated that ETIP activities would most likely focus on Morocco, Egypt, India, Pakistan, Indonesia, Thailand, the Philippines, Costa Rica, Guatemala, and the Dominican Republic. Although ETIP has been active in these areas, the program has not comprehensively addressed the objectives of the Project Paper but rather has directed the majority of its efforts on the immediate energy needs of the NIS.

Following the breakup of the Soviet Union, and the resulting expansion of USAID's global focus from "less developed countries" to "USAID-assisted countries (AACs)", the focus of ETIP was similarly broadened to address the NIS's immediate energy development needs.

Over the last 2 years, ETIP has been providing technical assistance principally to Russia, Armenia, and Belarus to improve and upgrade their natural gas, coal, and oil sectors. The program was originally designed and staffed to address problems in the developing world but is facing a very different set of issues in the NIS. Countries included in the NIS have a sophisticated and skilled workforce that doesn't require the same type of assistance as developing nations. Many of the NIS projects could be characterized as technical cooperation rather than assistance. Rather than conducting basic workshops and training programs, for example ETIP is collaborating with in-country specialists to upgrade gas distribution systems and reduce gas

flaring. Some of the activities undertaken for the NIS Task Force do not correspond exactly with the project scope, but they have been undertaken through ETIP because it provided a ready vehicle for important energy projects. For example, the availability of the ETIP vehicle made it possible to accelerate the construction of an Armenian power plant to help mitigate critical capacity shortfalls of the new nation.

The Evaluation Team found that Bechtel successfully managed the shift in focus by drawing on its extraordinary depth of technical personnel. The Missions had high praise for Bechtel's ability to respond quickly to in-country needs and provide the necessary technical expertise. The change in Project focus caused by the break-up of the Soviet Union could not have been foreseen by USAID and thus the Evaluation Team believes that ETIP's response is consistent with broader Congressional, State Department, and foreign policy interests. Alleviating chronic energy shortages in the NIS is essential to further economic reform, and thus the overall political stability of the region.

This shift in focus toward the NIS has caused ETIP's activities to become predominantly focused on the needs of one region. As Table 3-1 illustrates, a large percentage of ETIP's staff and resources are being utilized for quick-response, time sensitive activities in the NIS. This table reflects Bechtel's core staff time allotments for the first quarter of 1993. From their work load it appears that significantly more than 55 percent of ETIP's time has focused on NIS activities over the past year. The result is a patchwork of good projects, but "success" in advancing ETIP's objectives is hard to identify. For example, on several occasions the NIS Task Force has requested a team of technical experts to be sent to Russia with only one week's notice.

TABLE 3-1: ETIP RESPONSIBILITIES	
REGION/PROJECT	TIME CORE STAFF
NIS	55%
ASIA	
USAEP	4%
ASEAN	4%
India	2%
Indonesia	5%
Thailand	10%
CENTRAL AMERICA	5%
EPDF	15%

Although these projects meet critical needs of that region, they limit the resources available for other activities. This issue is extremely important in light of the fact that NIS activities will greatly diminish over the next few months as the NIS Task Force transitions to its own dedicated contractor. Both USAID officials and Bechtel are sensitive to this fact but have diverging views on how it will affect the future of ETIP.

USAID personnel have expressed concern that ETIP does not have sufficient regional diversity to support a continued high level of project utilization once the NIS activities are taken over by a dedicated contractor. USAID is concerned that the project is not branching out enough to identify new project opportunities. Bechtel does not share this concern. Pointing to active projects in Thailand, Indonesia, and the Middle East, they express confidence that these and other countries have sufficient interest to fill the gaps left by declining NIS activities. Moreover, Bechtel views USAID as the "lead" on project identification and Bechtel's role as one of outreach.

A weakness in this structure is the limited travel funding for the USAID Project Officer and the lack of energy personnel in the field, which limits in-person coordination. Taking the lead on project identification requires close coordination with host country missions and other personnel. Bechtel, however, has a global network of offices familiar with the energy needs of most AACs. Unofficially these offices have served as important listening posts for project opportunities. As NIS activity dwindles, Bechtel is confident that it will be able to provide the Project Officer with assistance in identifying sufficient opportunities for new projects.

Although both Bechtel and USAID officials have expressed a desire to develop a comprehensive and pro-active strategy, the program lacks a clear vision of how it will proceed into this next phase of activities. Given the fact that NIS activities are likely to fall off sharply in the next 6 months, it is urgent to consider refocusing project emphasis and sharpening project strategy.

It is recommended that ETIP follow through on the development of a pro-active strategy that focuses on a limited number of countries with specific goals and benchmarks. A comprehensive strategy, aimed at specific countries, even specific utilities, including leveraging of funding with other donors, will make project achievements more easily identifiable and more accurately measurable. Given that "nothing succeeds like success," it is likely that such strategic targeting would be the best selling point for the project. Of course, all of the present ETIP "reactive" capabilities must remain available under the contract, and quick-response activities would still be required on a case-by-case basis. There appear to be three major areas of potential project refocus:

1. **By region** (e.g., the Occupied Territories, Asia, or Latin America);
2. **By technology** (e.g., clean coal, biomass, natural gas); or
3. **By capabilities** (e.g., whole utility analysis, pipeline improvement, or renewable energy).

Regionally the project should continue to follow USAID priorities and focus on countries which could have a potentially large impact on global climate change, a large and growing energy demand, and are important to the United States for other foreign policy or economic reasons. For example, the Asia Bureau may hold considerable opportunities for ETIP. This stems from the rapid expansion of the Asian economy, the large Mission budgets, and the growing environmental mandate in Asia which could lead to an expanding market for U.S. environmental technologies.

In terms of capabilities, the new strategy could incorporate all ETIP services into a tightly focused project aimed at sustainable improvements in a selected region. For example, at present some activities have offered training for several mid-level utility managers from several countries. Upon their return, these trainees may or may not have the authority and leadership ability to implement the innovative concepts they have learned. Also, required improvements will likely be required in several of the utility's departments (i.e., plant operation and maintenance, transmission and distribution (T&D) planning, T&D operation and maintenance, collection, accounting). This suggests that training would be required for one or more people in each department. Without a "critical mass" of enlightened managers, the training is unlikely to result in positive change. **A tightly focused "whole utility analysis" that provides in-country assistance to sufficient personnel on all aspects of utility operation may have a greater chance of success.** While some elements of this analysis may be outside the scope of the ETIP contract, coordination among USAID programs could fill this gap.

3.2 Core Activities

3.2.1 Contractual Issues

Bechtel has made a strong effort to achieve the targets set out in its core contract and the Annual Project Plan, and has exceeded expectations in a few task areas, such as Innovative Clean Energy Technology Applications and Energy Management and Operations Improvement. At the same time, several of the initial activities listed in the Annual Plan have been substituted with new projects. These activities are predominately NIS related and reflect the shift in focus in response to the breakup of the Soviet Union.

USAID is satisfied with Bechtel's efforts on the core contract, both in Bechtel's responsiveness to administrative requests and in the timeliness and quality of deliverables. Additionally, the Evaluation Team reviewed reports and publications produced by Bechtel and found them to be satisfactory (however, no rigorous technical review was done). USAID Missions are also pleased with their interaction with the Bechtel team. One member of the NIS Task Force indicated that they were originally drawn to ETIP because it provided access to Bechtel's technical services.

According to respondents, activities undertaken by ETIP are based on an adequate review of national energy problems, needs, and priorities. However, there is a general frustration on the part of the USAID Missions, and host government officials in the NIS that certain national problems have been repeatedly studied by a variety of outside groups with no resulting action.

For example the Armenia Mission representative reported that ETIP had produced a study on coal reserves which was virtually identical to one produced by the Germans, and others, yet winter is coming again, fuel is still scarce, and funding has been set aside to study the problem again next year. We believe that in the Armenia case, most parties did understand the problem and were frustrated by the lack of ability to provide the commodities needed to alleviate the problem. **The impact of this problem can be minimized through better communication and closer consultation between the Washington office, USAID Missions, and host government officials to determine what national energy information is available, what the immediate national needs are, and what activities take first priority.**

In general, R&D/EI, and USAID Missions are satisfied with the work performed by Bechtel through the core contract. Bechtel has made every effort to remain flexible in light of ETIP's shift in focus, to respond quickly to urgent in-country needs, and to diligently meet the objectives of ETIP's mandate.

3.2.2 Information Dissemination and Identification of Opportunities

Dissemination of information is critical to USAID Mission awareness of ETIP's activities and services. R&D/EI circulates the ETIP weekly reports to Mission directors and also offers brochures on services it provides. This is the primary conduit through which they inform inactive Missions of their activities. In turn, the Missions serve as "listening posts" for potential opportunities. In addition, the Project Officer as well as contractor personnel make an effort to promote awareness of ETIP services during field missions.

The Evaluation Team found that Missions varied in their knowledge of ETIP activities and services. The difference in awareness levels is mainly attributable to the level of energy activity in a given Mission's portfolio. Missions that do not have energy in their portfolio perceive little need for ETIP services, and the corresponding awareness level is low. Also, some Missions are very self-sufficient and do not turn to outside contractors for assistance.

Moreover, despite the brochures, many Missions are not aware of the variety of services that ETIP provides. For example, several Missions were familiar with ETIP's mission and over all goals, but were unaware of the specific services available to them. The Armenian Mission indicated that on several occasions they asked whether contractors were available for specific technical tasks only to be told that it was outside the projects scope of work. However, they were never able to actually see the scope of work, so they were unable to move forward on the use of USAID contractors in a deliberate manner. Many Missions were confused about the differences between ETIP and PSED and viewed them as the same project.

Improving Mission awareness about ETIP is increasingly important as the NIS activities come to a close. We suggest that the project put together a new comprehensive document/brochure that (in addition to explaining ETIP's broad mission) outlines specific services available under ETIP. ETIP has the technical ability to carry out a broad spectrum of energy activities. For example, ETIP can conduct a full technical review of a utility including the design, construction, operation and maintenance of the entire generation, transmission and distribution process.

With respect to broad based information collection and dissemination, there is no clearly defined mechanism for documenting lessons learned for wide spread usage in the public sector. Bechtel is learning many lessons under ETIP that are invaluable to the private sector in introducing innovative and environmentally benign U.S. technologies into the NIS and the developing world. **We recommend a formal mechanism for transferring lessons learned and highlighting potential project opportunities to the private sector should be developed. If not documented, this knowledge base will be lost.**

ETIP buy-in activities are tracked along with and in the same fashion as core activities. Post-ETIP tracking of the impact of both core and buy-in activities is done only on an informal basis. **We suggest this tracking be formalized in order to provide a more concrete mechanism for evaluating overall project impact. It is critical to know whether projects initiated under ETIP go forward and result in added megawatt capacity or improved efficiency. We encountered a desire on several levels for a formal tracking system of USAID activities globally. This type of knowledge is invaluable to institutional growth and successful project implementation.**

3.3 Buy-In Activities

Buy-in activities are an integral part of ETIP and a critical element in project implementation. In a buy-in, ETIP provides technical assistance in response to a formal request by USAID Missions and USAID Offices and Bureaus. ETIP and the requesting Office negotiate a contract through USAID Contracts Office. The development and supervision of buy-ins is undertaken by the ETIP core staff. Although they take resources and staff away from core activities, it is unlikely that the project would be able to meet its broad objectives without the buy-in mechanism. ETIP has been involved in four buy-ins. One is completed and three are in progress.

Although buy-ins have proven successful as a mechanism to provide needed technical assistance to an AAC, the process itself has been criticized for bureaucratic delays and control from Washington. The NIS Task Force expressed concern that the review process by USAID Contracts Office was taking over 5 months and was often stalled by administrative delays. These delays were threatening participation by other groups in the buy-in, such as the World Bank. Bechtel has stated that they have received mixed signals from USAID regarding buy-ins in excess of \$1 million. It is Bechtel's understanding that buy-ins over \$1 million require a more intensive approval process. USAID, however, has emphasized that this approval process is not intended to be more arduous than the process required for buy-ins of less than \$1 million. **ETIP and R&D/EI should work together to resolve any misunderstandings regarding this process.**

A second criticism of the buy-in mechanism came from the Mission level. Mission officials said they wanted greater control and interaction with the contractors working in-country on buy-in projects. From their perspective, the Mission is paying for the services of the project and must in the end, answer for the success of the project. Under the buy-in arrangement, Missions do not have the right to command the Contractor directly. The Project Officer retains that responsibility. This arrangement has caused some frustration and reduced the attractiveness of

the buy-in mechanism to several missions. **We believe this problem can be overcome by establishing better communication channels prior to the initiation of activities. This arrangement should allow Missions and Bechtel to work together directly while creating a balance between Project Officer control and Mission input. Keeping all parties within the communication loop will increase the attractiveness and potential effectiveness of the buy-in.**

3.4 Administration and Staffing Issues

3.4.1 Core Staff Effectiveness

Key Personnel

Bechtel has assembled a core staff to manage and administer the ETIP Project for R&D/EI consisting of a Project Manager; Technical Manager; Project Engineer; Administrative Assistant; and an Administrative Manager. The resumes of the contractor staff have been reviewed and compared with the core staff responsibilities. The caliber of the contractor staff is viewed as fully satisfactory to meet the client's needs.

The core staff, appears to be somewhat overextended but is functioning adequately to meet the needs of the client. The staff works well as a team, and turnover among staff has not been a problem.

Authority and Responsiveness

Bechtel's management style works well with the demands and requirements of the USAID environment. Bechtel's Administrative Manager is responsible for virtually all ETIP financial, contractual, and administrative functions. He provides fast and accurate responses to all financial, contractual, and administrative questions which has minimized contractual or bureaucratic delays. Although the Administrative Manager provides an easily accessible point of contact for many USAID questions, his absence can cause serious disruptions in day-to-day operations. **The Evaluation Team recommends that Bechtel create a backstopping procedure that ensures that financial, contractual, or administrative questions can be efficiently answered in the Administrative Manager's absence.**

One staffing problem arose during the course of this evaluation. The success of the Siberian gas flaring project (a \$1.7 million buy-in) was threatened by a poor staffing decision made by Bechtel. Bechtel selected a Project Manager for the Siberian Project who had the necessary technical qualifications but who could not manage the logistics and diplomatic coordination necessary for a project of this scope. The problem became apparent during a high level meeting at Bechtel's headquarters in Houston, Texas. This meeting, organized to discuss a \$200 million World Bank loan, brought together key officials from the World Bank, the NIS, USAID, Bechtel, and Germany.

Several problems arose during the course of the meeting (e.g., no agenda was prepared, presentations were inappropriate and addressed the wrong issues, basic logistics were not

organized, and so on) which hindered the purpose and goals of the meeting. Bechtel's ETIP Project Manager, immediately aware of the problem, took positive steps to address the problem. Since the meeting, Bechtel has replaced the Project Manager and is working to alleviate concern on the part of NIS or World Bank Officials. **Although this was an unfortunate and serious incident, we are satisfied that Bechtel has taken the appropriate steps to defuse the situation.**

3.4.2 Communication Channels

Currently, formal communications are through monthly reports, weekly reports, and staff meetings. Overall, the project administrators seem to have a good working relationship with the project staff. When working closely with missions, Bechtel keeps USAID informed by submitting trip clearances and budgets to USAID before these events take place, then Bechtel delivers trip reports and minutes from meetings after these events. In addition, Bechtel prepares monthly reports for many of the ongoing activities funded under the core contract; these reports are submitted to USAID and followed up in meetings and in informal communications. USAID keeps missions informed by circulating weekly reports of activities to them.

3.4.3 Administration of Invoices and Deliverables

Prior to the commencement of the core contract and buy-in activities, Bechtel provides each subcontractor with a statement of work which defines the scope of the projected activities and reviews several subcontractor resumes to ensure technical competency. Each subcontract agreement provides incremental funding on the particular task areas of each subcontractor. The tasks assignments are budgeted by cost and level of effort. Subcontractor trip reports are reviewed to ensure they accurately reflect the activities that took place and that travel expenses are in compliance with the Federal Travel Regulations. Any travel expenses that exceed the allowable per diem are disallowed by Bechtel.

In its review of the separation of contractor accounting staff duties and responsibilities, the Evaluation Team observed adequate administrative internal controls. Clear goals and internal schedules are used to ensure the quality of and timeliness of responses. All work performed by the accounting clerks is reviewed for accuracy and completeness by the Office Accounting Supervisor. A final general ledger review is performed by the Controller on a regular basis. As bills come due for payment, the Controller reviews the vendor invoice or employee expense report to ensure that USAID funds are being disbursed in accordance with contract terms and applicable government regulations.

3.5 Cross-Cutting Themes

3.5.1 ETIP Relationship with Other Programs

ETIP has worked well with other USAID programs and has established effective relationships with other agencies and organizations. Within USAID, ETIP coordinates with PSED, the Energy Training Program (ETP), and the Energy Efficiency Project (EEP). They work together to develop training programs and coordinate outreach activities, specifically with regard to the EPDF. The Evaluation Team found that among many of the Missions, USAID's various energy programs are viewed as interchangeable. The broad statements of work among the several R&D/EI contractors (including ETIP) allow potential users (e.g., Missions) to choose the contractor that best suits their needs for a given project (on technical capabilities, availability, and other bases). On the positive side, this situation offers greater choice for the Missions while also allowing room for a changing world, however, it also fosters some measure of competition among the R&D/EI programs. Some Missions expressed concerns that this competition was detrimental to the work of the Office. In addition, some Missions are not cognizant of R&D/EI's internal organizational structure regarding specific project capabilities which sometimes leads to misunderstandings regarding communication and control requirements.

Outside of USAID, ETIP has developed effective relationships with a number of organizations. For example, through coordination with the World Bank and the European Bank for Reconstruction and Development, ETIP assisted Armenia in acquiring its first World Bank loan (\$65 million). However, this relationship has been strained recently by contractual delays and difficulties with the Russian Gas-Flaring Project. ETIP has also worked with the Inter-American Development Bank in the Dominican Republic on the privatization of electric sector.

Although ETIP has developed positive cooperative relationships with numerous organizations and institutions, we believe the project could benefit from an expansion of these relationships. Most of ETIP's activities have focused on the NIS with limited private sector involvement. We believe that through increased cooperation with trade organizations, other U.S. agencies, and programs, ETIP can increase its efforts in promoting the use of new innovative energy technologies while also enhancing the role of the private sector in its activities. For example, ETIP has been planning a trade mission to Thailand to promote clean coal technologies for some time; however, because of its heavy involvement in NIS activities, this has been delayed.

3.5.2 Private Sector Involvement

Although there is some private sector involvement in ETIP (for example, an advanced diagnostic equipment trade mission), private sector involvement has not been a focus of ETIP. According to Bechtel, the nature of ETIP's work does not allow a great deal of private sector involvement. A large amount of the work involves conducting resource assessments and providing technical assistance. Host country private sector firms have been used in the NIS and elsewhere to provide in-country knowledge and experience.

When ETIP is involved in a pre-feasibility study, Bechtel indicated that they attempt to involve U.S. firms but have found that many U.S. manufacturers are either uninterested or ill prepared to compete in the international market, despite the fact that most of the technologies ETIP has promoted are considered conventional by U.S. standards. (This is not to say, however, that these technologies were not innovative to the nations in which they were introduced.)

According to Bechtel, other nations such as Japan and Germany have an advantage in the market for new energy technologies because their governments are willing to finance demonstrations. Many AACs do not want to go forward with an expensive project unless they have seen one operating successfully and it is usually the Germans or the Japanese who have funds available for demonstration projects. Thus, the United States often lays the necessary groundwork and other nations win the contract. ETIP has however worked successfully on one occasion to involve the U.S. private sector. When the Thai Mission saw the opportunity for U.S. private sector involvement in the Maphaphut project, a large co-generation project, the Mission requested ETIP assistance. ETIP responded immediately with a technical and economic feasibility assessment. The project is now going forward with the involvement of a U.S. firm and a Thai developer. The project size also increased as a result of ETIP's efforts from \$500 million to \$1 billion. They are now seeking EPDF funding for about \$120K of a \$1 million feasibility study. This project will be a electricity (steam)/fertilizer plant.

In light of the project's goal to introduce innovative U.S. technologies and the need for U.S. industry to become more visible in the international marketplace, the Evaluation Team recommends ETIP should be more active and innovative in helping to promote U.S. energy/power equipment and services in developing countries.

3.5.3 Subcontractors

There are several subcontractors associated with the ETIP core contract: Ben Schlesinger and Associates, Viking Systems, RMA, Geothermax, Tropical Resources, Core International, RCG/Hagler, Bailly, U.S. ASEAN Council, and Price Waterhouse. Bechtel has used six (Ben Schlesinger and Associates, Viking Systems, Core International, RCG/Hagler, Bailly, U.S. ASEAN Council, and Price Waterhouse) of these contractors, most of them only once.

Although they expressed overall satisfaction, several of these firms indicated that they could be used more efficiently to enhance the project. These firms offer specialized training and technical services in the areas of finance, management, privatization, institutional development, energy systems and engineering. As ETIP's NIS related activities decline, the program is expected to return to its original scope which may require more of the subcontractor's capabilities. **We believe that it would in fact be in the best interest of the ETIP to make an effort to better incorporate the capabilities of the subcontractors.**

3.6 Impacts of ETIP

One of the major anticipated outputs of the ETIP is additional electric utility capacity in AACs. Furthermore, this capacity is to be provided through new, efficient, and environmentally clean energy technologies. To gauge ETIP's impact, the Project Paper recommends the following four components as indicators of project achievement:

1. Increase in power produced and delivered
2. Increase in efficiency of power generation, transmission, and distribution
3. Increase in environmental quality
4. Increase in quality of life

Because the project has only been active for 2 years and because energy project development and implementation can take several years, the Evaluation Team found these indicators difficult to utilize. A feasibility study may take 2 years or more depending on the size and complexity of the proposed project, if a decision is made to proceed, power purchase and fuel supply agreements must be negotiated (if it is a private power project), a design and bid specification package must be developed and financing must be arranged. This stage of the process can also take several years. Following that, contractors must be retained, and only then can construction commence. All this means that ETIP's impact in terms of installed capacity will probably not materialize during the life of the project. In addition, given the nature of ETIP's efforts and the many other groups involved in project development, it may be difficult to directly link project activities with a physical outcome or to socioeconomic, sociocultural, or gender impacts. Despite these difficulties, the Evaluation Team did assess how the project was proceeding towards these goals.

3.6.1 Increased Capacity and Efficiency of Power Generation, Transmission and Distribution

To date ETIP has not, through the buy-in mechanism nor through the EPDF Fund, added electricity capacity to any developing country. Both Bechtel and USAID see this as a weakness and would like to see new capacity built using a new innovative energy technology. The amount of capacity added however could be increased if activity under the public sector window of the EPDF were accelerated. As stated previously, given the program's timeline, the program's lack of added capacity is not an accurate indicator of Project success.

ETIP has made progress in increasing the efficiency of power generation, transmission and distribution. Through its NIS natural gas and oil pipeline improvement/upgrade projects, ETIP actions will dramatically increase the fuel availability, thus narrowing the demand and supply gap which has plagued the region. In addition to the NIS and Armenia projects, ETIP's efforts in Thailand and the Philippines will also probably result in increased capacity available to those nations.

3.6.2 Environmental and Quality of Life Impacts

Promoting environmental solutions to the energy problems of developing nations is central to ETIP's mission. Of particular concern is the growing potential for global warming as the result of atmospheric emissions of greenhouse gasses -- predominantly from the energy sector. ETIP's NIS activities will increase the environmental quality of the region. The efficiency improvements will result in a more substantial reduction in environmental damage than if the NIS followed a business-as-usual scenario. Under ETIP's Delivery Order 3, significant

improvements are being made in the NIS natural gas and oil pipelines that will result in a reduction of harmful atmospheric emissions.

It is expected that ETIP's efforts will have a positive, measurable impact on the environment, however, these projects take many years to develop. Given that ETIP's projects are still in the development stage, its measurable environmental impacts have yet to be achieved.

It was envisioned in the developmental stages of the program that ETIP would identify innovative, economic, and environmentally benign technologies in developing countries that may not otherwise be considered by host countries or donor agencies such as the World Bank. Environmentally benign technologies refer to power generation or conversion technologies capable of using alternative fuels and/or these which impose substantially lower environmental impacts than conventional generating options. Environmental technologies that were explicitly discussed in the original Project Paper and the core contract include:

"solar electric (solar thermal and photovoltaics), wind, geothermal, atmospheric fluidized bed combustors (AFBC) and integrated gasification combined cycle (IGCC) units, slagging combustors, fuel cells, and energy efficient management techniques and technologies."

Bechtel has focused primarily on the promotion of large-scale energy technologies which use traditional fossil based fuels rather than the renewable energy technologies listed above. Because of the demands for support of conventional power options, and because of the existence of other active R&D/EI programs in this area (eg. the Renewable Energy Application and Training [REAT], and Biomass Energy Systems and Technologies [BEST] programs), we believe that this emphasis of ETIP is appropriate.

Sustainable natural resource management is rarely incorporated into ETIP activities since the Project works primarily on conventional (fossil) power technologies. Modern resource extraction techniques, coupled with improved conversion efficiencies, both of which are promoted by the Project, do promote resource conservation, however.

3.6.3 Gender, Socioeconomic, and Cultural Issues

A lack of awareness of how people use natural indigenous resources, as well as the different gender impacts of policies, technologies, and institutional actions, has often led to poor investments in energy sector expansion. Recognizing this fact the original ETIP Project Paper stated:

"As part of the ETIP, policy analysis will be conducted which addresses some of these issues (discussed above) and, when relevant, specifically with regard to the impact on women."

However, the quick-response nature of most of ETIP's activities have not allowed for a careful examination of gender, socioeconomic, or cultural issues. Moreover, the social or cultural

impact of improving the efficiency of a gas distribution system is far more removed from daily life than a traditional USAID program, which may improve the efficiency of cookstoves within an underdeveloped region. Throughout our discussions respondents expressed the opinion that there is a weak link between issues of gender and energy and they saw limited opportunity to make that link given the program's scope of work. Additionally, they indicated that there were only a limited number of women with the necessary technical background to participate directly in project activities. Bechtel, however, expressed a desire to have more women involved in projects in the future and believed that improvements could be made. They noted that in the NIS there are more women involved in project activity than in LDCs, but women are generally not working in the higher levels of administration despite their apparent qualifications. The primary involvement of women in ETIP is within the training and workshop programs. **We recommend that ETIP examine these issues further and identify ways to facilitate bringing more women into the main technical aspects of projects.**

3.6.4 Economic Impacts

Over time, there is a strong correlation between the economic growth rate in a country and its use of electricity. At this juncture of ETIP's existence, it is too early to attempt to quantify the Project's economic impact. The project is not directly responsible for development of any new power plants nor have the NIS gas and oil pipeline upgrades been completed. Thus the project has not as yet increased the amount of power available in any region. However, over the 10-year life of ETIP, it will probably provide a variety of valuable technical analyses and project planning services that are not directly quantifiable in an economic analysis.

4.0 ENERGY PROJECT DEVELOPMENT FUND

4.1 History of the Fund

In an effort to further the goals of ETIP, a funding mechanism was created to offset some of the costs associated with performing prefeasibility studies prior to developing public sector innovative energy technology projects. This fund, called the Project Identification Fund was created through a buy-in to the existing Feasibility Study Fund of the Private Sector Energy Development (PSED) project.

The responsibility for administering the ETIP Project Identification Fund was awarded to Price Waterhouse in August 1990, through Delivery Order 1 (Q contract) to its contract for administering the Private Sector Energy Development (PSED) Fund. Funding in the amount of \$284,772 was obligated at that time. This funding was used for setting up the fund, administration and marketing. Additional funding for the ETIP Project Identification Fund, was obligated in September 1992, when Delivery Order 3 provided \$500,000 to the Price Waterhouse fund administration activity, bringing the total obligation to \$784,772. \$276,195 of this amount was applied to the funding window for distribution to subcontractors.

According to the Statement of Work in the first Price Waterhouse Delivery Order, the purpose of the ETIP Fund is to provide prefeasibility and other project planning services to various developing countries in energy sector activities that promote the use of innovative, environmentally sound energy technologies. The activities for which private U.S. firms can apply for funding according to this document include technical application/market assessments, definitional missions, prefeasibility studies, and special studies.

Because both the PSED and ETIP funds are administered through Price Waterhouse, it was decided to rename the funding mechanisms, giving them only one name -- the Energy Project Development Fund (EPDF). A consolidated application form reflecting this change was first made public in July of 1992. Price Waterhouse continues to maintain separate ledgers for the funds. The PSED-related funding is disbursed from the "private window," and ETIP-related funding is held and disbursed from the "public window." Funding for both accounts within EPDF as well as the administration contract for Price Waterhouse, ends in September 1994. The following table summarizes the funding mechanisms for the two activities.

FUNDING MECHANISM	PRIVATE WINDOW (PSED)		PUBLIC WINDOW (ETIP)	
	Total Obligated Amount	Funding Available for Subcontracts	Total Obligated Amount	Funding Available for Subcontracts
Core Contract -- PSED (DHR-5738-C-00-0097-00) September 1990	\$2,946,168	\$2,500,000		
Delivery Order 1 -- ETIP (DHR-5738-Q-00-0098-00)			\$284,772	
Delivery Order 2 -- PSED (DHR-5738-Q-00-0098-00) August 1992	\$728,790	\$504,291		
Delivery Order 3 -- ETIP (DHR-5738-Q-00-0098-00) September 1992			\$500,000	\$276,195
TOTAL	\$3,674,958	\$3,004,291	\$784,772	\$276,195

4.2 Activities of the Fund

Funding requests to the EPDF are initiated through a formal application process. In most cases the private or public organization contacts EPDF and makes a request for application. The completed application is then returned to Price Waterhouse, which then initiates the application review process. As of July 1993, the EPDF had received a total of 41 applications. Of those, 38 were private projects and potentially eligible for funding out of the private window, and 3 projects were public sector projects and potentially eligible for funding through the public window. Twelve of these applications were approved for funding by USAID. **Of the applications approved, only one is a public sector project.** Of the 12 approved projects, 1 has been put on hold and 2 projects have been canceled. This leaves 9 studies active or completed in the private and public windows. Table 4-2 illustrates the activity of the fund and its current status. The status of the 9 active projects is summarized in Appendix F. Total funds committed by EPDF through the public window are \$140,000 which leaves a balance of only \$136,195.

Of the remaining \$136,195 uncommitted in the public window, one application for this funding is currently being reviewed. If approved, the entire public window of the fund could be exhausted. We believe that this low level of funding, in addition to the recent date (September 1992) in which monies became available through the fund, is responsible for its low utilization.

Table 4-2

**ENERGY PROJECT DEVELOPMENT FUND
IV. FUND STATUS AS OF 6-30-93**

Applications Approved	Private Window	Public Window	Remaining Balance in Private Window	Balance in Public Window
Beginning Balance in Fund (1)			3,004,291	276,195
Hidroelectrica Aguas Zarcas	114,500	114,500	0	2,889,791
Synergics	130,000	130,000	0	2,759,791
Caribbean Electric Corp.	100,000	70,000	30,000	2,659,791
IEI - Malaysia (2)	200,000	75,000	0	2,459,791
IEI - Philippines	175,000	0	0	2,284,791
HidroAtlantica	40,000	20,000	20,000	2,244,791
Public Power of India	200,000	0	200,000	2,044,791
Cogentrix	200,000	0	200,000	1,844,791
Energia Global	127,000	63,500	63,500	1,717,791
Altresco Philippines	200,000	75,000	125,000	1,517,791
Power Systems, Ltd. (3)	200,000	0	200,000	1,317,791
Joseph Technologies (PUBLIC)	140,000	0	140,000	N/A
TOTAL	1,826,500	548,000	978,500	1,317,791
Potential Near-Term Awards	Private Window	Public Window	Remaining Balance in Private Window	Balance in Public Window
Ben Holt	189,000	N/A	N/A	1,128,791
Caithness	188,645	N/A	N/A	940,146
Super Systems	114,000	N/A	N/A	826,146
Heard Energy Corp.	339,350	N/A	N/A	486,796
Belyea	180,000	N/A	N/A	306,796
Parsons Main	TBD	N/A	N/A	306,796
Babcock & Wilcox	TBD	N/A	N/A	306,796
Pyropower (PUBLIC)	TBD	N/A	N/A	N/A
TOTAL NEAR-TERM AWARDS	910,000			N/A
Upcoming Disbursements				
Altresco	75,000			
Energia Global	31,290			
HidroAtlantica	20,000			
Caribbean Eelectric Power	30,000			
TOTAL	156,290			

- (1) - Private Window is funded by \$2,500,000 from the Core Contract and \$504,291 from Delivery Order
- 2. Public Window is funded by Delivery Order 3.
- (2) - Study has been cancelled; remaining funds will not be disbursed.
- (3) - Study on hold; subcontract for \$200,000 needs to be executed.

To date there have been no energy projects implemented following EPDF funding. However, the process of applying to the EPDF, completing a feasibility study, formulating project development contracts and relationships, and initiating a project generally takes several years.

4.3 Key Findings

A comprehensive review of the EPDF public window was performed under the Bechtel ETIP core contract. This report titled Evaluation of the Public Sector Window of the Energy Project Development Fund, provides a more detailed assessment of the Public Sector Fund and makes a number of key recommendations. For the purposes of this ETIP Mid-Term Evaluation, the Evaluation Team made the following observations and offers corresponding recommendations for the consolidated EPDF.

EPDF activities have centered generally around mid- to small-power development projects and the range of funding support (cost-sharing) from USAID has ranged from \$40K to \$200K. All parties involved with the EPDF, including the applicants, Price Waterhouse, USAID Missions and headquarters, K&M, and Bechtel, acknowledge that EPDF is a very valuable component in achieving the missions of PSED and ETIP. The general opinion of the fund recipients was that the EPDF program can make the difference between exploring project development options and not. All respondents had a number of criticisms and suggestions for improving the Fund. These comments are presented and illustrate below along with suggested alternatives for the enhancement of the Fund.

4.3.1 EPDF Public Outreach

At present, the EPDF is generally well known among potential project developers, USAID Missions, and other private and public energy power sector participants. This has not always been the case however, as awareness of the EPDF has increased significantly in the last two years as the result of aggressive marketing efforts.

Initially, the Energy Project Development Fund was promoted through discussion about the Fund at seminars, announcements in the Commerce Business Daily, selected magazine advertisements and word of mouth. Within the first 2 years of the Fund, only 12 applications were received. However, in 1992, Price Waterhouse proceeded with a major marketing initiative that involved detailed advertisements in the *Wall Street Journal*, *Financial Times*, and *Public Utilities Fortnightly* coupled with direct-mail solicitations (including the EPDF brochure included as Appendix G). In addition, seminars on the Fund, its applications, requirements, and benefits were conducted in Miami, Florida, Washington, D.C., and Los Angeles, California. This approach was quite effective but since it ended in 1992, the rate of receipt of Fund applications has fallen. However, funding for both the private and public windows of EPDF is nearly exhausted. Recent applications as well as those well into the pipeline account for more money than is available through the end of the current project. This assumes no infusions of funds to the EPDF, which is the position from which Price Waterhouse is currently operating. **Therefore, we do not recommend any increased activity in the area of marketing or information dissemination. If additional funding and a new contract for the EPDF is**

instituted, we would recommend a more aggressive information dissemination process. In particular, the EPDF half-day seminars were perceived as extremely beneficial and they resulted in numerous applications for funding. Also, a more targeted approach to marketing, through contacts made in ETIP activities would be appropriate.

In order to make specific recommendations regarding the Public Sector Window of the EPDF, a project funded out of the Bechtel Core Contract assessed the effectiveness of the fund through a survey of potential users. This comprehensive report entitled, Evaluation of the Public Sector Window of the Energy Project Development Fund for the A.I.D. Office of Energy and Infrastructure, makes detailed recommendations for improved marketing of the Fund. **We suggest that these recommendations be implemented in the event that the public window of EPDF receives additional resources.**

4.3.2 EPDF Administration and Management

There has been considerable rearrangement of the daily management and operations of the EPDF throughout its life (including its separate lives as PSED and ETIP funds). The contracts for administering the EPDF have been held/are held by two organizations: Bechtel (1989-1990) and Price Waterhouse (1990-1994). Over time, however, the level of involvement on the part of Price Waterhouse has varied. During much of the period of performance, Price Waterhouse has largely served a secondary role to K&M in the control of EPDF. This occurred as the result of two factors: first, K&M actively took control of many of the EPDF functions; and second, Price Waterhouse permitted K&M to largely control the Fund while it settled into a more passive role of reviewing documents and performing other accounting functions related to EPDF.

In response to this situation and a request from the Project Officer, Price Waterhouse recently has established an office that is located in the same building as the USAID Project Office. The impetus for this move was a perceived conflict of interest on the part of EPDF applicants who perceived K&M and Bechtel as potential competitors. The R&D/EI offices, as well as those of PSED and ETIP, are already located at 1601 North Kent, in Arlington, Virginia. Concurrent with the naming of its current full-time Fund Administrator in July of 1993, Price Waterhouse established an office in the same building with R&D/EI, PSED, and ETIP. The costs of this office space are being assumed by Price Waterhouse because no mechanism exists to pay for this expense in their current contract.

Since the change in location and personnel, Price Waterhouse has increased its involvement with the Fund. Now all marketing, correspondence, telephone calls, application materials and other matters related to EPDF are expected to go through Price Waterhouse.

A key reason for having a contract for EPDF administration was to avoid situations of perceived conflict of interest by companies considering applying to the Fund. Because Bechtel and K&M are potential competitors with many project development companies, it has been determined that it is in the best interest of Price Waterhouse to be the responsible party. Additionally, the fact that K&M is responsible for private sector projects through PSED and not public sector projects, may have impacted the way in which the Fund was marketed and applicants were identified. **Given the current scenario, it is recommended that Price Waterhouse continue to manage**

and administer EPDF, in practice and as directed by their core contract. The Evaluation Team feels that this will remove any perceived conflict of interest and will enhance the marketing efforts specific to the public window.

4.3.3 EPDF Application Form

The application process for funding through EPDF makes use of the "Information and Application Packet for Energy Project Development Fund" (Appendix H). The current packet was published in July 1992. In discussions with fund applicants, as well as EPDF-related personnel, we encountered significant criticism of the application process. The key criticism pertains to the application form itself. The instructions for the application are not clear enough for most applicants. As a result, numerous contacts with Price Waterhouse or Bechtel are required in order to fill in the forms. When applicants have required additional information while completing the application form, they have been satisfied with the response of Price Waterhouse or Bechtel. The current format, however requires an excessive amount of time and communication with the Fund administrators. The application form is currently being examined by Price Waterhouse. **We suggest that the application form continue to be reevaluated by Price Waterhouse with the assistance of R&D/EI in order to generate a more efficient application form.**

4.3.4 Application Review Process

The application review process for EPDF funding requests is described in the information and application packet (Appendix H). Once the application has been submitted to Price Waterhouse and is considered complete, it is submitted for an initial technical review. During this process there is significant contact with the applicant and clarifications are made to the application as needed. Once the initial review is completed and is satisfactory, a final evaluation is performed. This entire process is intended to take from 45 to 60 days.

Before July 1993 the technical review committees have consisted largely of K&M and Bechtel staff associated with PSED and ETIP. Three to four individuals were typically selected based on their regional and technical expertise. The principal justification for involving K&M and Bechtel staff in this capacity has been their extensive familiarity with the project development process, especially as it relates to private sector energy and innovative energy technologies. They also possess extensive knowledge of the countries for which applicants are pursuing projects. This practice was criticized by a number of fund applicants, based on a perceived conflict of interest and unease with K&M or Bechtel reviewing the proprietary material required for the application. The applications require extensive costing and materials information, which is considered proprietary. Accordingly, making use of K&M and Bechtel people for the technical reviews has recently ceased (Appendix I).

Price Waterhouse recently explored a number of options for the technical review process. The first was to involve independent consultants. This satisfied the conflict of interest perception, but it proved to be a very expensive alternative. The reviews require significant attention, and outside consultants often charge high rates. The program lacks sufficient funding to

accommodate such costs. The second option, which has been selected as the current review committee mechanism, is to make use of U.S. Department of Energy (DOE) staff members for the review. Price Waterhouse has arranged a cooperative agreement with DOE for this purpose. When a project is in need of review, it is given to the DOE office which handles the technology proposed in the feasibility study. These reviews will be done at no cost to EPDF. This alternative also solves the conflict of interest problem without the high cost of consultants.

There is some concern, however, with using DOE staff or other individuals who may be qualified in specific technical aspects of a particular technology, but may not have the necessary project development experience, including the financial analysis, political risk, and regulatory assessment capabilities required for the technical review process. In other examples, such reviewers also may lack the requisite knowledge and experience with the specific countries for which projects are proposed.

Price Waterhouse may wish to consider forming review teams composed of both DOE staff and independent consultants. The DOE staff would possess the necessary technological information, while the independent consultant could be relied upon for country-specific and project development expertise. The use of independent consultants, even in a limited role in concert with DOE staff, may necessitate funding that is beyond the capabilities of the current budget. In this case, R&D/EI should assess the possibility of adding the necessary funds for this vital process.

The criteria for evaluating EPDF applications applied throughout the review process are based on USAID criteria specified in the Project Papers. The review committee uses an evaluation form that includes the threshold project and feasibility study criteria. This form is based on a scale of zero to four and includes 11 topic areas (see Appendix J). The criteria are generally considered burdensome by fund applicants. The criteria require extensive information from the applicant that is not specifically requested in the current application. As a result, the technical review committees must communicate with the applicant, often on numerous occasions, in order to obtain the necessary clarifications. This tends to result in delays in the initial and final reviews. It is unlikely that employing DOE in the role of the review committee will accelerate this process. **Improving the application form, as recommended above, to include more of the specific criteria is likely to improve this situation. Additionally, USAID may wish to consider streamlining the current criteria. The criteria used by the Trade and Development Agency may provide a useful model of streamlining the process.**

Following the final technical review, approved applications are forwarded to R&D/EI staff for review and final award determinations. Of the 14 applications that have received final recommendations from the Review Committee, 12 have been approved for support from EPDF. The final stage of the application process involves the negotiation of subcontract agreements. At this stage, applicants and EPDF negotiate a set of deliverables for disbursement of the funds.

4.3.5 EPDF Funding Process

Once the final application is approved, funding recipients are required to submit deliverables to EPDF in accordance with the statement of work negotiated at the end of the application process.

Approval of the deliverables is required for each stage of payment. There are generally three major deliverables associated with these subcontracts, of which the final deliverable is the final feasibility study. The process of deliverable submissions, approval, and payments can be difficult. During the course of a feasibility study, the technology selection often changes. The project developer, however may be required to proceed with deliverables focusing on the original technology if there is not a significant degree of flexibility built into the contract.

It is recommended that the deliverable design and review process be pursued in a flexible manner. It is important to build into the subcontractor's funding contract a series of deliverables which are flexible enough to permit the latitude to investigate all of the possible technology choices.

4.3.6 Communication Issues

Key communication channels between Price Waterhouse and USAID are quarterly status reports, financial summary reports, and semi-weekly contractor and R&D/EI staff meetings. In addition, there are daily faxes, phone calls, and a thorough paper trail. No major barriers were identified relative to communication flows between Price Waterhouse and the R&D/EI staff. Although there may have been minor concerns about the daily communication process, this has improved since Price Waterhouse is in the same building with the R&D/EI staff. USAID Missions and Bureaus are brought into the communication loop and in general this information link is good. Price Waterhouse generally informs the Missions when an application is received for a feasibility study in their particular country.

4.3.7 Overall Strategy and Effectiveness of the Fund

Based on interviews with Fund recipients, USAID Missions and R&D/EI staff, we believe that the monies appropriated to for EPDF have generally been well spent, and that the funding made available has been used effectively by the recipients. However, a number of concerns limit the Fund's effectiveness. First, EPDF is limited most by the size of the fund and its long-term sustainability. The entire private window consisted of approximately \$3 million. With feasibility funding averaging \$200,000 each, this would permit about 15 cost-shared studies in 4 years, or less than four per year. **The entire public window only contained \$276,195, from which two studies will probably receive funding during the life of the project. Thus, despite the importance of EPDF for those who receive money, it is very limited in overall scope.**

A second concern pertaining to the scope of the fund is that given USAID budget cycles, it is not possible to plan for the long-term success (or even the existence) of the EPDF. Currently, the Fund is less than one year from completion, but the existing funds for studies will probably be committed based on the current applications under review. As a result, there is no incentive to promote the Fund or solicit new applications at this time, because additional applications would probably be turned down based upon a lack of available funds.

A third concern is that, given the relatively small size of the fund, it is inefficient to administer. For the public window Price Waterhouse has a contract ceiling of \$508,577 for management, marketing and administration. This is more than two times the total amount of money available for subcontracts through the public window.

Given these challenges it is suggested that USAID reconsider the organization of the EPDF. **One alternative would be to consolidate it with other feasibility study funds at USAID, either within R&D/EI or on a broader scale within USAID. Another alternative would be to assign the funds to the Trade and Development Agency, which recently initiated an energy sector program. Finally, if it is determined that the separate presence of the EPDF within the R&D/EI office is critical to its mission, then there should be an effort to substantially increase the level of available funding.**

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Overall Assessment

In its first 2 years (August 1991 - October 1993) the Energy Technology Innovation Project has successfully advanced the goals and objectives laid out in the Project Paper and the Annual Program Plan. Bechtel has met the expectations as required by the ETIP core contract and "Q" contract delivery orders. The project, however, has shifted from the original strategy outlined in the Project Paper. This shift has kept ETIP from making a significant and sustainable impact on the energy technology choices or management techniques of any one USAID-Assisted Countries (AAC). A number of the ETIP projects such as the cogeneration projects in Thailand and the Philippines, have been real successes for the program.

The overall conclusion of the evaluation is that although ETIP has been successful in its projects to date, by making a few changes, it can be significantly more efficient and effective over the next 2 years. The major challenge to ETIP is to effect sustainable change in the countries in which it is operating. The following findings and recommendations are submitted for USAID consideration. These recommendations are specifically aimed at improving the efficiency and responsiveness of ETIP as it seeks to alleviate, by environmentally acceptable means, the energy shortfalls in the developing world. In a general sense, broader lessons learned can be extrapolated to improve the efficiency and effectiveness of other USAID programs.

5.2 Findings and Recommendations

1. Instead of actively pursuing a global strategy, ETIP's activities have become predominately reactive in nature. A large percentage of ETIP's staff and resources are being utilized for quick-response, time-sensitive activities in the NIS. Although these projects address critical needs of that region, they limit the resources available for other activities. Furthermore, the NIS Task Force is in the final stages of securing its own energy contractor, which will result in the near-term phase out of ETIP activities in the NIS. Hence ETIP will soon move to a new phase of operation that will emphasize activities outside of the NIS.

It appears that officials of neither Bechtel nor the United States Agency for International Development (USAID) have a clear vision of how ETIP will proceed into this next phase of program work. Each has expressed a desire to become more proactive, but no new direction has been outlined.

It is recommended that ETIP develop a pro-active strategy that focuses on a limited number of countries with specific goals and benchmarks. A comprehensive strategy, aimed at specific countries, even specific utilities, including leveraging with other donors, could make program achievements more easily identifiable and more accurately measurable. All of the present ETIP capabilities would still be available under the contract, and quick-response activities would still be required on a case-by-case basis. The strategy would simply act to provide a general focus for the bulk of ETIP activities.

The three major areas of potential project refocus are: (1) by region, (2) by technology, and (3) by capabilities. Regionally, the project should follow USAID priorities and focus on countries that could have a potentially large impact on global climate change, a large and growing energy demand, and are important to the United States for other foreign policy or economic reasons.

In terms of capabilities, the new strategy should incorporate all ETIP services into a tightly focused project aimed at sustainable improvements in a selected region. The resources and abilities of ETIP subcontractors should be included in the focus to offer comprehensive services.

2. No strategy has been implemented to encourage private sector involvement in ETIP. The Project Paper discusses the use of trade missions to ensure private sector involvement but because NIS activities have been so time consuming, activities to promote the use of U.S. energy technology and services have been put on hold.

Additionally no real vehicle exists, other than contractor goodwill, to transfer lessons learned or potential project opportunities to the private sector. Lessons learned in Russia, Armenia, and Belerus have potential applicability to the U.S. private sector as it enters these new markets.

In light of the project's goal to introduce innovative U.S. technologies and the need for U.S. industry to become more visible in the international marketplace, it is recommended ETIP be more active and innovative in helping to promote U.S. energy/power equipment and services in developing countries.

3. The public sector window of the Energy Project Development Fund (EPDF) has received only three applications and has funded only one study. These disappointing results are related to a variety of circumstances, mainly (1) no monies were available through the public window until September 1992, (2) the amount of total funding available was extremely low (\$276,195), (3) Bechtel has no contractual relationship with the fund, and (4) the public sector window did not receive promotional support in the early stages of its development. Unfortunately, funding for the public windows of EPDF is nearly exhausted. Recent applications as well as those well into the pipeline account for more money than is available through the end of the current project. This assumes no new infusions of funds to the EPDF, which is the position that Price Waterhouse is currently operating from.

We do not recommend, therefore, any increased activity in the area of marketing or information dissemination. If additional funding and a new contract for the EPDF are instituted, we recommend a more aggressive information dissemination process. In particular, the EPDF half-day seminars were perceived as extremely beneficial and they resulted in numerous applications for funding. Also, a more targeted approach to marketing, through contacts made in PSED and ETIP activities, would be appropriate.

4. USAID is concerned that not enough project opportunities exist in the pipeline to sustain ETIP once NIS activities slow and are taken over by a dedicated contractor. Bechtel does not share this concern, however, Bechtel believes that it is the Project Officer's responsibility to take the lead on marketing ETIP services.

It is recommended that Bechtel should not be reluctant to market the services of ETIP (under the guidance of the Project Officer) while out in the field. In-person coordination is essential to discovering the needs of an AAC and to promoting the capabilities of ETIP.

5. There seems to be a substantial amount of untapped opportunities for ETIP. Unfortunately there is insufficient travel funds available to the Project Officer to allow for proper promotion of ETIP's services to USAID Missions (and it is unlikely that this situation will change substantially in the near-term).

By simply improving the "packaging" of the Project, including a summary of ETIP's scope of work, experiences in developing countries, lists of projects completed, capabilities of subcontractors, and examples of services available, an increase in Mission involvement may occur. The Evaluation Team recommends that Project promotional material should either implicitly or explicitly incorporate ETIP's global strategy.

6. Generally, Missions are satisfied that ETIP activities are undertaken with an adequate review of national energy problems, needs, and priorities; however, in at least one case (Armenia) there was a frustration that valuable funds were being used for an analysis of a problem that was already well understood and documented.

Better communication and closer consultation between the Washington office, USAID Missions, and host government officials is encouraged to determine what national energy information is available, what the immediate national needs are, and what activities take first priority.

7. Mission officials want greater control and interaction with the contractors working in-country on buy-in projects. This arrangement has caused some frustration and reduced the attractiveness of the buy-in mechanism to several Missions.

This problem can be overcome by establishing formal control and communication channels prior to the initiation of Mission level activities. This arrangement should allow Missions and Bechtel to work together directly while creating a balance between Project Officer control and the Mission. Keeping all parties within the communication loop will increase the attractiveness and potential effectiveness of the buy-in.

8. ETIP has developed positive cooperative relationships with numerous organizations and institutions including other USAID programs such as the PSED Project, EEP and ETP. Outside of USAID ETIP has cooperated with the World Bank, the European Bank for Reconstruction, and the Inter-American Development Bank.

ETIP could benefit from an expansion of these relationships to include increased cooperation with various trade organizations, and other government agencies and programs. Additionally, ETIP should continue to explore opportunities for cost-sharing and collaboration in order to increase the impact of ETIP activities.

APPENDIX A

MID-TERM EVALUATION
SCOPE OF WORK

UNITED STATES OF AMERICA
AGENCY FOR INTERNATIONAL DEVELOPMENT

Advisory or Assistance Services:
Yes X No

1. Country of Performance: Worldwide
2. Indefinite Quantity Contract: PDC-0001-I-00-2053-00, Delivery Order No. 05

NEGOTIATED PURSUANT TO THE FOREIGN ASSISTANCE ACT
OF 1961, AS AMENDED, AND EXECUTIVE ORDER 11223

3. CONTRACTOR (Name and Address): :4a. ISSUING OFFICE:
: :
Harza Engineering Company : Agency for International Development
232 South Wacker Drive : FA/OP/B/LA
Sears Tower : Washington, D.C. 20523-1430
Chicago, Illinois 60606-6392 :4b. ADMINISTRATION OFFICE:
: Agency for International Development
TIN: 52-090-4808 : FA/OP/B/LA
CEC: 00-643-607F : Washington, D.C. 20523-1430

5. PROJECT OFFICE: :6. SUBMIT VOUCHERS TO:
: :
R&D/E&I : Agency for International Development
S. Schweitzer : FA/FM/CMP/DC
: Room 700, SA-2
: Washington, D.C. 20523-0209

7. EFFECTIVE DATE: :8. ESTIMATED COMPLETION DATE:
XXXXXXXXXXXXXXXXX : XXXXXXXXXXXXXXXXX

9. ACCOUNTING AND APPROPRIATION DATA:
Amount Obligated: \$XXXXXXXXXX : PIO/T No.: 936-5741-3692157
Ceiling Price: \$XXXXXXXXXX : Project No.: 936-5741
Appropriation No.: 72-1131021.1 : Budget Plan Code: DDVA-93-16963-IG11

10. The United States of America, represented by the Contracting Officer signing this Order, and the Contractor agree that: (a) this Order is issued pursuant to the Contract specified in Block 2 above and (b) the entire Contract between the parties hereto consist of this Delivery Order and the Contract specified in Block 2 above.

11a. NAME OF CONTRACTOR: :11b. UNITED STATES OF AMERICA
Harza Engineering Company : AGENCY FOR INTERNATIONAL DEVELOPMENT

BY: (Signature of authorized individual): BY: (Contracting Officer)
:
:

TYPED OR PRINTED NAME: : TYPED OR PRINTED NAME:
: Jay M. Bergman (GAJ)
: 9511n

TITLE: : TITLE:
:
: CONTRACTING OFFICER

DATE: : DATE:

BACKGROUND

The goal of the Agency for International Development (A.I.D.) is a world in which economic growth and development are self-sustaining and the extremes of poverty have been eliminated. Energy is a critical input to attaining these goals. The Office of Energy (R&D/EI) shares with other Bureaus and Missions in the agency the responsibility for helping A.I.D.-assisted countries (AAC) obtain appropriate energy services. To do this the Office has designed and implemented a program that focuses on energy technology and innovation called the Energy Technology Innovation Project (ETIP).

ETIP was implemented to specifically and comprehensively address the issues of energy shortages and the amelioration of adverse energy sector environmental impacts. The ETIP was structured to provide engineering services, financial services, technology transfer, and training for all aspects of enhancing energy production, transmission, distribution, and end-use. This included both the enhancement of existing energy sector facilities and institutions and the development of new facilities and institutions. The former approach has been receiving increased technical assistance attention because it frequently requires considerably less capital, particularly hard currency capital, than new energy facilities. Past experience has demonstrated to A.I.D. that incorporation of such a wide-range of energy sector technical assistance capabilities under a single contract streamlines the implementation of specific contract work; enhances effective projects management and coordination; and results in cost savings to A.I.D.

The ETIP includes a feasibility study fund for providing pre-loan project support for public sector power initiatives in AACs. The fund is administered by a subcontractor who cooperates with the primary ETIP contractor in advertising the fund and evaluating applications.

The purpose of ETIP, which began in 1990, is to introduce innovative and environmentally-sound engineering technologies and management techniques which promote sustainable and cost-effective operation of electric generation, transmission, and distribution systems in developing countries.

ARTICLE I - TITLE

Energy Technology Innovation Project (Project No. 936-5741)

ARTICLE II - OBJECTIVE

The objective of this Delivery Order is to provide contractor support to evaluate ETIP and make recommendations to the R&D/EI regarding the advisability and nature of activities executed under the ETIP project.

11

ARTICLE III - STATEMENT OF WORK

The evaluation and financial review of this project will begin within two weeks of the award of this contract. The purpose of the evaluation is to analyze achievements and shortcomings relative to the Office and/or Agency expectations and current international energy economic conditions; and to look at the individual activities within the project and how they relate to other programs in the Office of Energy.

The evaluation will include: 1) interviews with office staff, contractors and grantees associated with the project, and users of these projects; 2) examination of financial and administrative records; 3) examination of reports and publications; and 4) consultation with appropriate A.I.D. officials in Washington and in the field. (International field visits will not be necessary to carry out this evaluation. However, some domestic travel to the corporate headquarters of the project's contractor may be necessary). The contractor will address but not be limited to the following key questions:

A. General Program Effectiveness and Impact

1. To what extent does the ETIP project meet the objectives and goals set out in the original project papers? Explicitly, how has the contractor progressed toward achieving the targeted outputs? To the extent that the project has evolved in ways not fully foreseen at the time the project was approved, have these changes enhanced the effectiveness of the project?
2. How is the project perceived by A.I.D. Missions? Are the missions aware of the project and its capabilities? If not, how should this be dealt with? Is the project seen as effective in assisting missions in working with AAC's to resolve their energy problems?
3. How is the project perceived by the ETIP contractor? Is the contractor satisfied with R&D/EI's communication and working styles? Are there recommendations for improvements in this working relationship?
4. How well does the contractor respond to R&D/EI administrative (non-technical) requirements? Are responses to R&D/EI's requests for administrative information provided in a timely fashion? Does the information fully address the requests made by R&D/EI? What is the process taken by the contractor to fulfill the administrative requests made by R&D/EI?
5. Have the ETIP project activities been based on an adequate review of national energy problems, needs and priorities, and on consultations with A.I.D. Missions and host government officials?

6. Do the ETIP activities complement or duplicate other projects in the Office? Other A.I.D. programs? How well is it integrated with these other projects?
 7. Which types of activities under ETIP have been successfully financed, implemented or managed, and have resulted in a significant impact on development? Which types have been less successful? What have been the major issues? How should they be addressed?
 8. How have U.S. and indigenous private sector interests been involved in the implementation of the programs?
 9. Is the project responsive to foreign policy interests, as expressed by the Administration and the Congress? How? Can this responsiveness be improved upon? (Specifically, how has the project addressed the issues of trade competitiveness and global climate change?)
 10. How is the project related to A.I.D.'s interest in promoting institutional development and sound energy policies in developing countries?
 11. Has the project established effective relationships with other parties, such as other U.S. Government agencies, non-government organizations, financial institutions, and foundations, in order to leverage increased activities?
 12. How well does the management and implementation of this project complement the other energy projects in R&D/EI?
 13. Have the ETIP project activities met important needs in the developing countries? Have those needs been appropriately satisfied through the use of the particular policies promoted? Can an estimate of the impact in megawatts, direct and indirect, be attempted?
- B. Energy Technology and Innovation
1. Has the project analyzed the overall AAC potential for private sector energy development? What criteria have been used to narrow the project focus to a select group of AACs? How have project activities been carried out in representative targeted countries?
 2. Has the project adequately identified the constraints to more widespread utilization of private power policies for energy production in AACs? What action has the project initiated to address these constraints?

3. How has ETIP integrated sustainable natural resource management approaches into its activities? How have environmental issues pertaining to private power initiatives been analyzed and documented during the life of the project? Have these impacts on the environment been positive or negative? What criteria have been used to ensure compliance with A.I.D. policies and regulations (including, but not limited to, A.I.D.'s host country and lending institutions' environmental regulations)?
4. Have national and regional-level analyses of private power policy utilization been carried out with an appropriate degree of economic, technical and financial analysis? Have socioeconomic and sociocultural issues been adequately studied? Have project impacts on rural income generation and job creation been documented and substantiated?
5. What activities have been carried out to promote dissemination of adequate information concerning private power policies? How has this activity aided increasing understanding of the project goals, accomplishments, the potential contributions of private power policy, and the current status of worldwide implementation of private power policies in other AACs?
6. Each year the office prepares a Program Plan listing expected activities and accomplishments during this period. This plan should be reviewed to see if project targets (i.e., number of projects, megawatts installed and running, CO2 saved, etc...) were reached. If project targets were not met, what were the impediments and how were they addressed?
7. What level of activity has the feasibility fund encountered? Are the missions and private industry aware of its existence, purpose, and application procedures? What criteria are applied for? Are these criteria for evaluating applications documented clearly and practiced consistently? Have any of the projects funded actually been constructed as of yet?

C. Financial Review

The objective of the financial review is to ensure that the contractor has adequate and sound financial management and accounting procedures; that R&D/EI funds are accounted for and billed in accordance with applicable regulations and agreement provisions; and that the contract is being carried out in accordance with A.I.D. regulations and OMB requirements.

This financial review is not intended to be an audit. It is a review to determine if adequate internal controls, accounting procedures and documentation systems that affect the R&D/EI agreements are in place and routinely followed. The review will provide management information and allow the office to work with contractor to correct deficiencies in the financial management of R&D/EI funds.

Prior to commencing the financial review, the contractor will hold discussions with the R&D/EI project officer and the program analyst to obtain necessary background information. This may include copies of agreements, amendments and relevant information on grants or contracts. The project officer and program analyst will provide a briefing on any concerns or special issues which the contractor should address. To the extent possible, the project officer and program analyst will provide the contractor with concrete examples and documents in support of any concerns. Project files will be made available, as necessary.

To the extent necessary to carry out the purpose of the review, the following documents should be reviewed before commencing the review:

- contract/grant agreements and amendments;
- prior audits and financial reviews, including OMB Circular A-133 (or A-110) and OMB Circular A-128;
- payment vouchers; and
- project reports.

The contractor shall review, but not be limited to, the areas outlined below.

The internal controls that affect the R&D/EI agreements should be reviewed to the extent that the OMB Circular A-133, OMB Circular A-128 or other recent reviews have not sufficiently addressed the area. If significant weaknesses were identified in prior reviews, the contractor should determine whether corrective action was taken.

The internal controls reviews will determine the adequacy of the following:

1. Procedures to provide oversight to sub-recipients or sub-contractors;
2. Separation of duties and responsibilities (do adequate levels of approval exist?); and,
3. Controls over check-writing procedures?

In addition the contractor shall determine whether:

1. Required OMB audits are conducted in a timely manner and submitted to the cognizant audit agency;
2. Financial reports (e.g. Financial Status Report, SF 269 and SH 1034, Public Vouchers) are accurately prepared and submitted on a timely basis and supported by subsidiary accounting records;
3. R&D/EI funds are properly dispursed and accounted for in compliance with the agreement and in accordance with applicable laws and regulations;

4. Adequate procedures are in place for using the method of financing, e.g., letter of credit, periodic advances, direct reimbursements;
 5. Requirements for matching funds or cost-sharing have been met any procedures are in place to insure that matching contributions are met and properly accounted for; In-kind contributions are valued fairly;
 6. What applicable, buy-in expenses are being accounted for separately and reported to Mission project officers?
 7. Procedures are adequate to distinguish between direct and in-direct costs;
 8. Personnel charged to the contract can be accounted for;
 9. Charges are directly related to the time spent on the agreement, in those cases in which personnel and working on more than one contract;
 10. Allowances and entitlements are paid in accordance with A.I.D. regulations and contract provisions (per diem and travel expenses);
 11. Travel procedures are in place to ensure that trips are approved by the A.I.D. Project Officer in advance and that travel is reasonable (i.e., necessary for proper administration of the project) and conducted in accordance with A.I.D. regulations;
 12. Equipment and supplies are purchased in accordance with the contract, and are properly identified and fully utilized for the intended purposes; and,
 13. Where applicable, participant training costs incurred are allowable, necessary for the implementation of the project, and properly accounted for under the provisions of the agreement and in accordance with A.I.D. regulations.
- D. Contractor's Program Administration and Staffing
1. Are the contractor's key personnel working on the projects of appropriate professional calibre and background? Are their individual responsibilities appropriate to their skills, and do they appear to be fulfilling their individual responsibilities effectively?
 2. Are the individual ETIP contractor core staffs effective as a team? Can their effectiveness be improved through reorganization, improved office automation, additional hiring or other changes?

3. Are existing communication/consultation channels between the contractors and R&D/EI considered adequate by both parties? Are other A.I.D. entities Regional Bureaus, Missions (and other A.I.D. Offices) brought into the communication/consultation loop at appropriate points?
4. Are changes needed in R&D/EI's backstopping and management of the ETIP activities? If so, what changes are recommended?

The financial review portion of the evaluation should be set up so that it can be used as a stand alone document.

E. R&D Cross-Cutting Evaluation Themes (some of these are covered in areas above)

1. Cost-sharing: R&D projects are rarely financed by R&D alone. R&D frequently depends on the financial and substantive participation of other parts of A.I.D. through buy-ins (which are the subject of topic E2. R&D also usually assumes participation of other non-A.I.D. organizations, which we call cost-sharing. In the context of evaluation, this "non-A.I.D." participation needs to be examined. Cost-sharing is an important factor contributing to project success, and should be encouraged as a means of mobilizing resources for project objectives.
 - Is cost-sharing considered a part of the original project design? If not, should it have been?
 - Do project implementation instruments set test requirements for cost-sharing? Did cost-sharing from the contractor, grantee or project participants have an effect, positive or negative, on the project?
 - Have outside parties provided resources for the project? Can the efficiency and impact of the contribution, if any, be assessed?
2. Buy-ins: For many R&D projects, a substantial amount of a project's financing comes through buy-ins. A conservative estimate of the total buy-in contribution to R&D projects is in excess of \$300 million. The use of this mechanism to support a major part of R&D efforts is becoming institutionalized and consequently an assessment of it is essential to the oversight and accountability function.
 - Is there a process for tracking activities financed through the buy-ins? Are there mechanisms in place to measure the substantive effects of buy-ins?

- Have the buy-ins made a positive contribution to the project? Have the buy-ins complemented the R&D-funded portion of the project and enhanced the overall effect of the project?
- What impact have the buy-ins had on the project's staff?
- Have the buy-ins taken resources away from the core activities?
- Is achievement of the project's original objectives dependent or independent of the buy-ins? In what way?
- What are the attributes of buy-in experiences that have worked well, e.g., attributes of success? Similarly, what has not worked well?

3. Sustainability: Institutionalization of R&D-supported interventions is critical to longer-term sustainability.

- How is sustainability addressed by the project? Is sustainability addressed directly in project design? Is capacity-building a part of the project? Is there verifiable progress on institutionalization from project efforts to date?
- Has the project taken into account the financial and institutional requirements to continue operation of the project activities after A.I.D. funded is terminated?
- Can we assess the extent to which the project target audience is motivated to ensure long-term sustainability?

4. Women in Development: Gender considerations are implicit in most A.I.D. projects. Agency policy is to emphasize and support the active participation and substantive contributions of women in the development process. As a result, project designs have been considerably improved in respect to language application and use. However, this has created a need for oversight of gender-related effects and issues.

- Were gender issues discussed in the project paper?
 - Were gender issues taken into account during project implementation?
 - Can project impact be desegregated by gender? Do project data reflect gender consideration?
 - Were activities that impact on gender reported to the Project Officer? If so, how were they reported? How could the reporting mechanisms be improved upon?
- 56

5. **Information Collection and Dissemination: Dissemination of findings should be an important part of R&D projects. Project components addressing information collection and dissemination are often critical to project success.**
- Are the collection and dissemination of information identifiable components of the project? Were these components planned in the project paper?
 - Does the project support a reference library or "data base"? What are the project's mechanisms for dissemination? Are project data being disseminated?
 - Has the project had an ascertained effect attributable to dissemination?

APPENDIX B
INTERVIEW RESPONDENT LIST

Appendix B
ETIP Interview Respondent List

<u>Respondant</u>	<u>Affiliation</u>
Bob Beckman	USAID NIS Task Force
Jim Bever	USAID NIS Task Force
Mike Caffrey	Price Waterhouse
Angelique Crumbly	USAID HQ
Buck Fernandez	BNF
Richard Germain	International Energy Finance
John Hammond	Viking Systems
Fred Karlson	Bechtel
Efrain Laurenao	USAID Dominican Republic
Ed Markesett	USAID Belarus
El Olikar	Joseph Technologies
Mr. R.J. Gurley	USAID Thailand
Kami Rahbani	Price Waterhouse
Ken Riekard	USAID Armenia
Alberto Sabadell	USAID HQ
Sam Schweitzer	USAID HQ
Endi Seshardri	USAID India
Bill Shapiro	Ben Schlesinger and Assts.
Vinod Shrivastava	Core International
Henry Steingass	USAID HQ
Alex Sunderman	USAID Philippines
Shirley Toth	USAID HQ
Doug Vincent	Bechtel
Gordon Weynand	USAID HQ
Ali Zavar	Price Waterhouse
Bill Williams	Altresco

APPENDIX C
DOCUMENTS REVIEWED

Appendix C

Documents Reviewed

- Bechtel Core Contract and Modifications
- Bechtel Q Contract and Delivery Orders
- Price Waterhouse Core Contract and Amendments/Q Contract and Delivery Orders
- ETIP Project Paper
- ETIP Annual Program Plan
- ETIP Payment Vouchers
- ETIP Financial Status Report, SF 269
- ETIP SH 1034, Public Vouchers
- EPDF Information and Application Packet
- EPDF Brochure
- Evaluation Form for EPDF
- Standard Operating Procedures for Bechtel
- Resumes for Bechtel Key Personnel
- ETIP Quarterly Status Reports 1st through 7th Quarters
- ETIP Semi-Annual Level of Effort Report, 10/92 - 3/93
- Status Report IX, EPDF Feasibility Fund Activities
- A.I.D. Evaluation Handbook
- Office of Energy and Infrastructure, Directory 1993-1994
- Energy Innovation & Private Power Sector Division Assignment of Responsibilities
- Memorandum from S. Schweitzer to staff re: Responsibilities for the Coordination and Administration of ETIP and PSED Consolidation Study Fund
- ETIP Monthly Reports
- Memorandum from F. Karlson to S. Schweitzer re: ETIP FY 1993-1994 Program Plan Narrative
- EPDF Monthly Update for March 1993
- Center for Financial Engineering in Development Corporate Capabilities
- Evaluation of the Public Sector Window of the EPDF
- Marketing Plan for Consolidated Project Development Fund of AID Office of Energy and Infrastructure
- Design for Consolidated Feasibility Study Fund
- Financial and technical feasibility assessment of Map Ta Phut Cogeneration Project in Thailand, Final Report, June 1993.
- Capabilities and Competitiveness of U.S. Environmental Technologies, March 1992
- Evaluation of Power Plant Operation for National Power Corporation, January 1992
- Private Power Development in the Philippines, July 1992
- Hrazadan Power Plant - Unit No. 5 Pre-Loan Assessment Review, December 1992
- U.S.-ASEAN Coal Energy Technology Transfer & Market Opportunities, March 1992
- Report on Alternative Cogeneration Source for Egyptian Rice Industry
- Marketing Plan for Consolidated Development Fund of A.I.D. Office of Energy and Infrastructure, for Kyrgyzstan, Kazakhstan, Armenia, May 1992.
- Memorandum of Energy Sector Discussions 1). USAID Energy Team Visit to Kyrgyzstan of August 1992; USAID Energy Team Visit to Kazakhstan of August 1992; USAID Energy Team Visit to Armenia of September 1992; and, Deputy Ministry Anatoly I. Baranovsky USAID Energy Team, (Final Reports, August, 1992)

APPENDIX D
TOPIC GUIDES

Respondent: _____ Date: _____

Position & Organization: _____

General Background Information

1. How long have you been involved with the Energy Technology and Innovation Project (ETIP)?
2. What is your role relative to ETIP? (Get them to briefly describe their major activities and with whom they interact the most to fulfill their responsibilities)

ETIP Objectives and Direction

3. From your perspective, what are the key goals and objectives of ETIP?
4. Has ETIP evolved in ways not foreseen at the time the project was approved? (Get them to identify major areas where activities have deviated from original plans) If yes, what were the reasons for this shift?
5. Have these changes in ETIP direction or activities had any effect on the project? If yes, how (probe for positive or negative effects – have changes improved or detracted from project effectiveness)?
6. What progress has been made to date by Bechtel toward achieving the goals and objectives set out in the original project papers or any new goals/objectives/activities associated with ETIP changes you identified earlier? (Try to get examples of specific accomplishments) What remains to be done?
7. Do you feel that there is enough time remaining in the contract to achieve all of these goals and objectives? If no, in what areas might there be a shortfall? Why?
8. How are you identifying and handling project opportunities within the international marketplace to satisfy USAID Headquarter and Mission program objectives?

Context in Which ETIP Operates

9. How do ETIP activities address the foreign policy interests of the Administration and Congress, especially as they relate to trade competitiveness and global climate change? In what ways might ETIP responsiveness to these issues be improved?
10. How do ETIP activities relate to AID's interest in promoting institutional development and sound energy policies in developing countries?

11. Has the project established effective relationships with other parties, such as other U.S. government agencies (DOE, DOC), non-government organizations (UN, EEC), financial institutions (World Bank), and foundations, to leverage increased activities? Which relationships have worked well and which ones have not worked so well? Why?
12. Has the project involved U.S. and host country private sector interests in the implementation of ETIP activities? If yes, who has been involved and in what capacity have they been involved?
13. Are you satisfied that this is an adequate level of private sector involvement in ETIP implementation? If no, what else could or should be done?
14. How well do ETIP activities fit in with other R&D/EI Office projects in particular (e.g., Energy Policy Development and Conservation Project, Renewable Energy Applications and Training Project, etc.), and other AID programs in general?
15. Are ETIP activities well integrated with these other projects/programs, or is there any overlap or duplication of activities? If duplication exists, has this been addressed in any way?

ETIP Implementation Activities

16. Have ETIP activities been based on an adequate review of the national energy problems, needs and priorities of AACs? If no, what are the shortcomings of this review?
17. What were the primary sources of information for this review of AAC energy needs etc.? Were AID Missions and host government officials consulted as part of this review process? If no, why not? If yes, what type of input did each party provide? Was their input satisfactory/adequate for ETIP information needs?
18. Has ETIP analyzed the overall AAC potential for application of new technology options? If yes, did this include an appropriate degree of economic, technical, and financial analyses of new technology option utilization at the national and regional levels? (Probe for examples of what was done)
19. What criteria were applied to narrow the ETIP focus to a select group of AACs? Does experience to date indicate that these were appropriate criteria? If no, what changes would you suggest to the criteria?
20. Has ETIP adequately identified the constraints to more widespread application of new technology options for energy production in AACs? What are the key constraints?
21. What action has the project initiated to address these constraints? What have the results been to date?

22. Has ETIP integrated sustainable natural resource management into its activities? If yes, how? If no, why not?
23. What criteria have been used to ensure compliance with AID, host country, and lending institutions' environmental policies and regulations? Are these criteria adequate to ensure compliance? If no, what changes might be needed?
24. How was sustainability addressed by ETIP? Was it a part of the project design?
25. Was capacity-building a part of ETIP activities? Has the ETIP taken into account the financial and institutional requirements to continue operation of project activities after AID funding ends?
26. Have socioeconomic and sociocultural (e.g., gender, education, health care, political stability) issues been adequately studied? If yes, with what results? If no, why not?
27. Specifically, were gender issues considered as a part of the project design? If yes, how? If no, why not?
28. Were gender issues taken into account during project implementation? If yes, how? If no, why not? Can ETIP impacts be disaggregated by gender? If yes, what are these impacts?
29. Were activities that impact on gender reported to the Project Officer? If yes, how were they reported? Do you have any suggestions for improving the reporting mechanism? If gender activities were not reported, why not?
30. The ETIP annual Program Plan lists expected activities and accomplishments. Have project targets been met? If no, what impediments did they encounter and how were they/will they be addressed?
31. With delivery orders being focused on specific vs. broad-based country needs, how do you intend to address these broad-based needs (e.g., non-NIS related)?

ETIP Information Collection and Dissemination

32. Are information collection and dissemination identifiable components of ETIP? Were these components planned in the project paper?
33. Does the project support a reference library or database? If yes, please describe briefly the types of materials/data contained in the library or database and who its key users are.
34. What activities has ETIP carried out to promote the dissemination of adequate information concerning new technology options? To whom is this information disseminated and in what format?

35. Are any mechanisms in place to measure the impact of information dissemination activities (e.g., follow-up to conferences, workshops, or training sessions to see if participants actually did anything with the information)? If yes, what are they? If no, why not?
36. Are you satisfied with the level of information dissemination, in terms of ensuring awareness of ETIP, its goals, its purpose, and its opportunities, among Missions, host countries, the private sector, and other relevant parties?

Energy Project Development Fund - EPDF (Fund administered by Price Waterhouse)

37. How is the EPDF promoted to solicit applications? In your opinion, is this level of "marketing" adequate? If no, what else could or should be done to increase awareness of the fund and its potential?
38. What level of activity has the feasibility fund encountered to date?
39. Based on your experiences and any feedback that you may have received, do you feel that missions and private industry are aware of the funds' existence, purpose, and application procedures? Why do you say that?
40. What criteria of the feasibility fund are applied for (e.g. basic threshold requirements; project characteristics; and prefeasibility or feasibility study characteristics)?
41. Do you believe that the criteria for evaluating fund applications are clearly documented and practiced consistently? What makes you say that?
42. Have any of the projects funded been implemented or constructed yet? If yes, which ones? If no, what is their status and anticipated completion date?
43. Have any of the EPDF funded projects encountered undue delays? If yes, why and what has been/will be done?

Cost Sharing and Buy-Ins

44. Is cost-sharing considered a part of the original ETIP design? If yes, how? If no, should it have been?
45. Do project implementation instruments establish the criteria for cost-sharing? If yes, what are these criteria? Based on your experiences to date, are these criteria appropriate and adequate?
46. Have outside parties provided resources for ETIP through cost-sharing? If yes, who are they and what are their reasons for participating? Can the efficiency and impact of their contribution be assessed?
47. Is achievement of ETIP's original objectives dependent or independent of buy-ins? In what way?

48. Is there a process for tracking ETIP activities financed through buy-ins? If yes, briefly describe the process? Does this process measure the substantive effects of buy-ins? If buy-ins are not tracked, why not? Are any measures planned for tracking buy-ins?
49. Have buy-ins taken resources away from ETIP core activities? If yes, how and with what effects?
50. Have buy-ins had an impact on ETIP staff? If yes, how has it affected project staff? Can or should anything be done about this situation? Do you have any suggestions?
51. Based on your experiences, what would you say are the main attributes of buy-in experiences that have worked well? What are the key characteristics of buy-in experiences that have not worked so well?

ETIP Impacts

52. In general, have ETIP activities met important needs in developing countries? If yes, how? If no, why not?
53. Have the energy needs of developing countries been appropriately satisfied through the use of particular policies? If yes, how? If no, why not?
54. Can the direct and indirect impacts of ETIP activities be estimated in megawatts? If the respondent cannot provide an estimate, probe for reasons why this is not possible. Get the respondent to identify any documentation that would support estimates of ETIP impacts.
55. Have environmental issues been documented and analyzed over the life of the project? If yes, what have the environmental impacts been? If no, why have they not been studied?
56. Have ETIP impacts on rural income generation and job creation been documented and substantiated? If yes, ask for source documents. If no, why have these impacts not been documented/substantiated?
57. Has ETIP had an ascertained effect attributable to its information dissemination activities? If yes, can you briefly describe the main effects? If no, why has there been no discernable effect?
58. Has the information dissemination activity increased understanding of ETIP goals, accomplishments, the potential contributions of new technology options, and the current status of worldwide implementation of new technology options in other AACs?

Respondent: _____ Date: _____

Position & Organization: _____

General Background Information

1. How long have you been involved with the Energy Technology and Innovation Project (ETIP)/Private Sector Energy Development Project (PSED)?
2. What is your role relative to ETIP/PSED? (Get them to briefly describe their major activities and with whom they interact the most to fulfill their responsibilities)

Contractor Staff Assigned to ETIP/PSED

3. Who are the key personnel working on ETIP/PSED? (Get numbers of staff and job titles for both technical and administrative positions) ~~Ask this of the contractor; only names could be gotten by reviewing resumes, etc.~~
4. What percentage of their time do these individuals spend on ETIP/PSED? For individuals who are not 100% dedicated to ETIP/PSED, by whom and how are priorities set for which project(s) they work on any given day? Is this arrangement satisfactory/effective and efficient?
5. In general, are there enough staff to support the project? Do staff ever experience excessive workloads?
6. What are the professional caliber and background of these individuals (for both technical and administrative staff)?
7. What are the individual responsibilities of key staff? Do you feel that their knowledge and skills are consistent with these responsibilities? If no, what are their shortcomings? Have these shortcomings had any impact on the project?
8. Are these staff fulfilling their responsibilities effectively? Why do you say that? (Get concrete examples if possible)
9. Do these staff members have the appropriate level of authority to fulfill these responsibilities? (e.g., Maria Alessandri of K&M, admin. person on-site at AID office building, unlike Doug Vincent of Bechtel, must refer many contractual matters to the downtown K&M office, which causes unnecessary delays)

10. From your perspective, is the overall depth and breadth of available key staff resources adequate to meet A.I.D. and Mission needs? (If no, ask for examples of inadequacy) What do you see as being the main reason(s) for this inadequacy? What can be done to improve the situation?
11. How have you been able to balance existing staff resources against multi-faceted USAID task assignments in consideration of other USAID/non-USAID project commitments?
12. Do your core staff members assigned to ETIP/PSED work effectively as a team? Why do you say that? Can you provide any examples?
13. Could the effectiveness of your core ETIP/PSED staff members be improved? How (Probe for different ideas -- e.g., through reorganization, improved office automation, additional hiring, or other changes)?
14. What has been the turnover rate among your staff assigned to ETIP/PSED? (If there has been some turnover, ask ...) What impact has this had on the project (positive or negative)? If negative impact, what is the contractor doing (has done or plans to do) to improve the situation?

Contractor/A.I.D./R&D - EI Interactions & Administrative Arrangements

15. What are the key communication/consultation channels between the contractor and R&D/EI? Between R&D/EI and the contractor? (Get some information on the most important methods -- e.g., formal reports, informal telephone calls, meetings, etc. -- and frequency)
16. Effective communication flow between the contractor and USAID is essential. What barriers have been experienced by you (if any) and what strategies for improvement have been implemented to improve this interface?
17. Are the communication procedures required by A.I.D. (e.g., reports, updates) excessive? Why do you say that?
18. What procedures are followed to keep USAID Headquarters abreast of project needs and of the demands of its Missions?
19. Are other A.I.D. entities, Regional Bureaus, Missions (and other A.I.D. offices) brought into the communications/consultation loop? If yes, how and when are these others groups brought into the communications loop?
20. Are these appropriate points for these entities to be brought into the communications loop? If no, when should they be brought into the communications loop? (Try to get a sense of who should be brought in when)

R&D/EI Processes and Procedures as They Impact ETIP/PSED Administration

21. What are the key features of R&D/EI's backstopping and management of ETIP/PSED activities?
22. Are any changes needed in R&D/EI's backstopping and management of ETIP/PSED activities? If yes, what changes are needed? Has anything been initiated to implement any of these changes?
23. Are you satisfied with the overall working relationship between you and R&D/EI (you and the contractor)?
24. What would you say works well and what does not work so well in the support provided by R&D/EI?

Contractor Administrative Processes and Procedures

25. What are your processes/procedures for responding to R&D/EI's administrative requests? How have you systematized internal administrative and financial approval processes so as not to delay corporate sign-off of: invoices, contract documents, delivery orders, etc.?
26. What quality assurance/quality control processes do you incorporate into task assignments to ensure project deliverables meet the requirements of the assignment?
27. In general, how well do you respond to R&D/EI administrative (non-technical) requirements?
28. Are your responses to R&D/EI requests for administrative information provided in a timely fashion? If no, are there specific areas that appear to be most problematic in terms of timeliness? What are the reasons for these difficulties?
29. Aside from timeliness, does the information provided satisfactorily address R&D/EI administrative requests (e.g., in terms of comprehensiveness, accuracy, etc)? If no, what are its shortcomings?
30. Can you suggest any changes that might make your responses to administrative requests more effective or efficient?
31. What are the key obstacles or constraints to these changes, given your resources/capabilities, and given AID policies and procedural or contractual requirements?

Buy-Ins

2. Are ETIP/PSED activities that are financed through buy-ins tracked in a systematic way (from an administrative perspective)? If yes, how? If no, why not?

- 33. What impact have buy-ins had on your staff resources? If a negative impact, has anything been or will anything be done to address this situation?**
- 34. Have buy-ins taken resources away from the core activities of ETIP/PSED? If yes, how? What effect has this had from an administrative perspective?**

Other

- 35. What has been the major barrier(s) in responding to and managing quick response assignments?**
- 36. Are there specific AID policies or procedures (contractual or administrative) that have proven to be problematic for you as the contractor? If yes, which ones and what were the difficulties? Can you suggest any solutions that might improve this situation, recognizing that many policies and procedures cannot be readily changed?**
- 37. Are there any other administrative issues that we have not yet discussed, but you feel have an effect on the ETIP/PSED project?**

Respondent: _____ Date: _____

Position & Organization: _____

General Background Information

1. How long have you been involved with the Energy Technology and Innovation Project (ETIP)/Private Sector Energy Development Project (PSED)?
2. What is your role relative to ETIP/PSED? (Get them to briefly describe their major activities and with whom they interact the most to fulfill their responsibilities)
3. Are you satisfied that you have the appropriate level of authority to fulfill your financial/administrative responsibilities effectively and efficiently? If no, why not and what could be done to improve this situation?

Issues/Concerns Identified by R&D/EI Project Officer and Program Analyst

Discussions with these individuals should provide background information for the financial review. This should include a briefing on any concerns or special issues that should be addressed by Meridian.

Financial Review - Results of Prior Reviews (if any)

Need to be aware of any significant weaknesses identified in prior financial reviews, so that you can determine whether any corrective action was taken.

Financial Review - Current

4. What are the procedures to provide oversight to sub-recipients or sub-contractors? Are these procedures adequate?
5. Is there a clear separation of duties and responsibilities among contractor staff to ensure that adequate levels of controls exist?
5. What are the controls over check-writing procedures? Are these controls adequate?
7. Are the required OMB audits conducted in a timely manner and submitted to the cognizant audit agency?
8. Are the required financial reports (e.g., Financial Status Report, SF 269 and SH 1034, Public Vouchers) prepared accurately, submitted on a timely basis, and supported by subsidiary accounting records?

9. Are R&D/EI funds properly dispersed and accounted for in compliance with the agreement and in accordance with applicable laws and regulations?
10. What are the procedures for using different methods of financing, e.g., letter of credit, periodic advances, direct reimbursements? Are these procedures adequate?
11. What procedures are in place to insure that matching contributions are met and properly accounted for? Are these procedures adequate? Have requirements for matching funds or cost-sharing been met? Have in-kind contributions been valued fairly?
12. What applicable buy-in expenses are being accounted for separately and report to Mission project officers? Are these procedures adequate?
13. What are the procedures for distinguishing between direct and in-direct costs? Are these procedures adequate?
14. Are all personnel who are charged to the contract accounted for? How are they accounted for? Are these procedures adequate?
15. Are charges directly related to the time spent on the agreement, in those cases in which personnel are working on more than one contract? Are the procedures for tracking/monitoring this adequate?
16. Are allowances and entitlements paid in accordance with A.I.D. regulations and contract provisions (per diem and travel expenses)?
17. What are the travel procedures to ensure that trips are approved by the A.I.D. Project Officer in advance and that travel is reasonable (i.e., necessary for proper administration of the project) and that travel is conducted in accordance with A.I.D. regulations? Are these procedures adequate?
18. Are equipment and supplies purchased in accordance with the contract?
19. Are equipment and supplies properly identified and fully utilized for the intended purposes?
20. Where applicable, are participant training costs incurred allowable?
21. Are participant training costs necessary for the implementation of the project?
22. Are participant training costs properly accounted for under the provisions of the agreement and in accordance with A.I.D. regulations?

Respondent: _____ Date: _____

Position & Organization: _____

General Background

1. When did you first become involved with the Energy Technology and Innovation Project/Public Sector Energy Development Project (ETIP/PSED)?
2. How did you learn about ETIP/PSED, its overall goals and capabilities? Were you satisfied with the information available to you about the project in general?
3. Please describe your general experiences with ETIP/PSED. What services have you taken advantage of? Do you plan to continue working with ETIP/PSED in the future?
4. Do you work with any other USAID programs or Office of Energy and Infrastructure projects (e.g., PSED, BEST, REAT) or other agency energy programs? If yes, In general, how well is ETIP/PSED integrated with these other programs? Does ETIP/PSED complement or duplicate these programs?

Awareness of the ETIP/PSED Fund ~~Ask of Fund Users Only - Skip to 6 if not a Mission Staff~~

5. How did you learn about ETIP's Project Identification Fund/PSED's Feasibility Study Fund (or Energy Project Development Fund for both)?
6. From your experiences to date, do you feel that private industry/public utilities in general is aware of the fund, its purpose, and application procedures?
7. What else could be done to disseminate information about or to promote the fund and reach a larger audience?

Application Process and Working Relationships ~~Ask of Fund Users Only~~

8. Were you satisfied with the application process and the criteria established for receiving funding? Do you have any suggestions for changes in this area?
9. Did you encounter any difficulties in getting funding? If yes, what were they and how were they resolved?
10. Did you receive ETIP/PSED assistance in a timely fashion? Did the pace of assistance match the needs of your project?

11. Are you satisfied with the working relationship between you and Price Waterhouse, the fund administrator? Can you suggest any improvements in fund administrative procedures?
12. Just speaking about the ETIP/PSED contractor, USAID, and Mission staff, with whom do you interact most frequently relative to actually implementing the project funded by ETIP/PSED?
13. How often and for what purpose do you interact with these people?
14. Are you satisfied with the working relationship established with these parties?
15. Do you have any suggestions for improvements in these working relationships that would facilitate your ability to implement your project or that would contribute to positive project outcomes?

Mission Awareness of ETIP/PSED ~~Ask of Mission Staff Only - Skip to Q. 19 for Fund Users~~

16. How did you first become aware of ETIP/PSED and its capabilities?
17. Based on your experiences to date and interactions with other Mission staff, approximately what percentage of Missions do you feel are aware of ETIP/PSED, its core activities, buy-in opportunities, and the purpose and scope of ETIP's Project Identification Fund/PSED's Feasibility Study Fund (or Energy Project Development Fund for both)?
18. Is there anything else that could be done to increase Mission level of awareness about ETIP/PSED and its potential for assistance in developing countries? If yes, what would you suggest and who should be responsible for increasing awareness?

Scope of Project(s) Being Assisted by ETIP/PSED ~~Ask of both Mission Staff and Fund Users~~

19. What is/are the nature of the project(s) currently being assisted by ETIP/PSED (through the Energy Project Development Fund for Fund Users, and buy-ins for Missions)? Is it a/are they joint venture(s)? If yes, with whom?
20. What is the current status of the project(s)? When do you anticipate it/them being completed?
21. Does/do the project(s) take into consideration sustainable natural resource management issues? If yes, how? If no, why not?

22. Does/do the project(s) take into consideration socioeconomic and sociocultural issues? If yes, how? If no, why not?
23. Does/do the project(s) address sustainability? If no, why not? If yes, does it/do they take into account the financial and institutional requirements to continue operation of the project(s) after AID funding stops?
24. Can you assess to what extent the target audience of the project(s) is motivated to ensure long-term sustainability?
25. Does/do the project(s) address gender issues? If yes, how? If no, why not?
26. Does/do the project(s) involve collection and dissemination of information? If yes, what type of information is/will be disseminated and to whom?
27. Are there any mechanisms in place to measure the impact of information dissemination activities? If no, why not? If yes, what are these mechanisms?
28. What are the anticipated impacts of the project(s) on the development of the host country in general?
29. What are the anticipated impacts of the project(s) on the host country in terms of promoting innovative and environmentally sound technologies (for ETIP)/private power policies (for PSED)?

Future Activities ~~Ask of Fund Users Only~~

30. Do you plan to apply for any additional ETIP/PSED funding or other type of AID funding for similar projects? Why do you say that?
31. Are there other sources of assistance similar to ETIP/PSED, which you have considered? If yes, how do they compare to ETIP/PSED (e.g., better or worse)?

Mission Views on ETIP/PSED Processes and Outcomes ~~Ask of Mission Staff Only~~

32. Overall, do you feel that ETIP/PSED is effective in assisting Missions in working with A.I.D. assisted countries to resolve their energy problems? Have ETIP/PSED activities (i.e., core activities, buy-ins, and EPDF activities) met important needs in the host country?
33. Are you satisfied with the nature and results of ETIP/PSED core activities to date? Why do you say that? What aspects have worked well, and what aspects have not worked so well?

34. Are you satisfied with the nature and results of your buy-in experiences to date? What aspects have worked well, and what aspects have not worked so well?
35. Are you satisfied with the nature and results of the projects being implemented under the Energy Project Development Fund? What aspects have worked well, and what aspects have not worked so well?
36. Do you feel that Mission staff are brought into the communication/consultation loop between R&D/EI and the contractor/subcontractors and other parties to the degree needed and at the appropriate times? Why do you say that? Do you have any suggestions for changes to improve communications?
37. Are you satisfied with the caliber and availability of contractor staff for buy-in activities? Are they fully responsive to Mission needs in terms of timeliness, knowledge, skills and experience? (Get examples if possible) Do you have any suggestions for changes in this area?
38. Based on experiences to date and future Mission needs, do you feel that your Mission will continue to work with ETIP/PSED on energy development activities? Why do you say that?

APPENDIX E

**ETIP PROGRAM PLAN AND
ACCOMPLISHMENTS SUMMARY**

APPENDIX E
ETIP'S 1992-1993 PROGRAM PLAN

Innovative Clean Energy Technology Applications

1. Conduct ASEAN Clean Coal Technology Trade Mission (jointly with PSED).
2. Assess Clean Coal Technology (CCT) prefeasibility in ASEAN.
3. Provide Technical Support to India IGCC demonstration (jointly with PSED).
4. Conduct oil shale electricity workshop; initiate Egypt, Israel, and U.S. cooperative project.
5. Organize and participate in AFSA infrastructure trade symposium (jointly with PSED).

Environment Technology Applications

6. Conduct natural gas utilization definitional mission and workshop in key global warming country.
7. Plan and implement an atmospheric emissions monitoring systems initiative and associated multilateral financing fund; assess technology options for global warming emissions reductions (key countries).
8. Assess the costs and benefits of solid waste-to-energy applications (Thailand).
9. Develop (with best project) rice hulls power plant project (Egypt).
10. Assess environmental opportunities definitional mission.
11. Assess geothermal opportunities.

Energy Efficiency and Availability Improvement

12. Conduct Phase 1 of power plant availability improvement project in Philippines (jointly with PSED).
13. Develop power plant diagnostics project in India.

Energy Management and Operations Improvement

14. Scope energy resources management information system in Philippines (buy-in project).
15. Manage and perform Capital Infrastructure program project for the Philippines; manage and perform.

16. Perform a power plant operation and management needs assessment in an Asian country to be determined in collaboration with the U.S.-Asia Environmental Partnership (AEP).

ETIP's goals as laid out in its 1993-1994 Program Plan are to:

Innovative Clean Energy Technology Applications

1. Initiate in Thailand and the NIS clean coal technology demonstrations (includes buy-in projects).
2. Initiate low-rank coal upgrading prefeasibility assessment in ASEAN or the NIS.
3. Provide technical support to India IGCC demonstration.
4. Conduct oil and gas fuels production assessments in the NIS (buy-in).

Environment Enhancement Technology Applications

5. Undertake natural gas distributions and storage technology transfer in the NIS (buy-in projects).
6. Plan and implement an atmospheric emissions monitoring systems initiative and associated multilateral financing fund; assess technology options for global warming emissions (key countries).

Energy and Efficiency and Availability Improvement

7. Initiate demonstration of power plant performance enhancement in the NIS and ASEAN (includes buy-in project).
8. Initiate cogeneration plant upgrading in the NIS (buy-in project).

Energy Management and Operations Improvement

9. Provide energy planning support to selected NIS republics (includes buy-in projects).
10. Identify management and operations improvements to increase oil refineries energy efficiency in the NIS (includes buy-in projects).
11. Loan power and support management to Armenia (buy-in project).

OFFICE OF ENERGY & INFRASTRUCTURE ENERGY TECHNOLOGY INNOVATION PROJECT (ETIP)

ETIP ACCOMPLISHMENTS SUMMARY

1 October 1993

Revision 1

No.	Program Plan Task	Status	Associated ETIP Elements (s)	Associated ETIP Elements(s) Description	Accomplishment Reports/ Documentation	Start/Complete Date
A.	INNOVATIVE CLEAN ENERGY TECHNOLOGY APPLICATIONS					
1.	Conduct Clean Coal Technology Trade Mission, ASEAN	Complete Complete Complete Complete Complete Complete	1,2 1,2 3 4 7 7	Conducted energy and resource assessments for Thailand Conducted energy and resource assessments for Indonesia Participated in U.S. CCT Definitional Mission with DOE, DOC, and TDA Conducted SO2 retrofit seminar with EGAT executives and Mae Moh plant technicians Participated in seminar w/DOE and DOC on CCT in ASEAN Preliminary survey of LNG vehicles in U.S. for potential consideration as mass transit fuel in Thailand	CCT Briefing book--Thailand CCT Briefing book--Indonesia Final report issued Seminar held Presentation/slides Report issued	Dec'92-June'92 Dec'92-June'92 Jan'92-Sept'92 May'92-June'92 May'92-July'92 Apr'92-May'92
2.	Prefeasibility Assessment, Clean Coal Technology (CCT) Power, ASEAN	Complete	6	Conducted financial and technical feasibility assessment of Map Ta Phut Cogen Project	Final report issued	Oct'92-Sept'93
3.	Clean Coal Technology Demonstration, Thailand	Complete in Progress	6 6	Developed workplan to introduce retrofit FGD technology at Mae Moh Power Station Planning IGCC reverse trade mission	Workplan issued n/a	July'93-Sept'93 Jun'93-present
4.	Low Rank Coal Upgrading Prefeasibility Assessment, ASEAN	Complete in progress	3 4	Surveyed feasibility of U.S. coal upgrade processes for Indonesian coals Identifying potential Indonesian & U.S. partners for conducting feasibility assessment	Draft report on file n/a	Jun'93-Aug'93 Jun'93-Dec'93
5.	IGCC Demonstration Technical Support, India	In Progress	6	Attempting to renew interest with Indian Government & BHEL	n/a	Aug '91-present
6.	Conduct Oil Shale Electricity Workshop; Initiation of Egypt, Israel, and U.S. Cooperative Project	In Progress In Progress	4 4	Holding discussions to renew interest due to changing Middle East Political picture Developing technical assistance strategy for the region	n/a n/a	Sep '93-present Jun '93-present
7.	Oil and Gas Fuels Production, NIS	In Progress Complete Complete	4 5 4	Conducting Natural Gas and Natural Gas Liquids Flaring Project Participate in study tour with Russia's MEF and Transneft regarding privatization Hosted international workshop on gas-flaring reduction commercial options	Monthly reports issued 3 meetings held in D.C. Conference held in Houston	Feb '93-present Jul '92-Jan '93 Aug '93-Sep '93

1 = Resource Assessment; 2 = Energy System Assessment; 3 = Prefeasibility Study; 4 = Tech Assistance/Tech Transfer; 5 = Tech Assistance/Institutional; 6 = Tech Assistance/energy Sector; 7 = Special Studies

OFFICE OF ENERGY & INFRASTRUCTURE ENERGY TECHNOLOGY INNOVATION PROJECT (ETIP) (CONT'D.)

ETIP ACCOMPLISHMENTS SUMMARY

1 October 1993
Revision 1

No.	Program Plan Task	Status	Associate d ETIP Elements (s)	Associated ETIP Elements(s) Description	Accomplishment Reports/ Documentation	Start/Complete Date
B.	ENVIRONMENTAL ENHANCEMENT TECHNOLOGY APPLICATION					
8.	Conduct Natural Gas Utilization Definitional Mission and Workshop, Key Global Warming Country	Complete	7	Assessed current and projected natural gas use in A.I.D.-assisted countries	Report on file	Sep '91-present
9.	Natural Gas Distribution and Storage Technology Transfer, NIS	In Progress	4	Conducting assessment of Four Cities gas distribution systems for upgrades/improvements	Monthly reports issued	Mar '93-present
		In Progress	5	Conducting financial and institutional assessment of four Russian gas distribution utilities	Monthly reports issued	Jul '93-present
		In Progress	6	Developing and applying a city specific natural gas demand forecast model	Monthly reports issued	Jun '93-present
10.	Conduct Assessment of U.S. Environmental Industry Competitiveness, Asia and LAC	Complete	1	Assessment capabilities & competitiveness of U.S. environmental technologies	Final report issued	Dec '91-Mar '92
11.	Global Environmental Strategies, Technical Assistance	In Progress	6	Developing project environmental role	n/a	Jul '93-present
		Complete	6	Environmental Specialist identified	Specialist started September 21	Sep '93-present
		Complete	7	Compiled draft report on environmental laws in India	Draft report issued	Jun '93-present
		Complete	7	RFP issued for environmental source book	RFP	May '93-Jun '93

1 = Resource Assessment; 2 = Energy System Assessment; 3 = Prefeasibility Study; 4 = Tech Assistance/Tech Transfer; 5 = Tech Assistance/Institutional; 6 = Tech Assistance/energy Sector; 7 = Special Studies

OFFICE OF ENERGY & INFRASTRUCTURE ENERGY TECHNOLOGY INNOVATION PROJECT (ETIP) (CONT'D.)

ETIP ACCOMPLISHMENTS SUMMARY

1 October 1993
Revision 1

No.	Program Plan Task	Status	Associated ETIP Elements (s)	Associated ETIP Element(s) Description	Accomplishment Report/ Documentation	Start/Complete Date
C.	ENERGY EFFICIENCY AND AVAILABILITY IMPROVEMENT					
12.	Conduct Phase 1 Power Plant Availability Improvement Project, Philippines	Complete	6	Evaluated power plant operation in Philippines to improve plant availability and efficiency	Report issued	Nov '91-Feb '92
13.	Power Plant Performance Enhancement, NIS and ASEAN	Complete	3	Supported effort to assess potential of replacing existing nuclear capacity with alternative energy options in NIS		
		In Progress	6	Developing Workplan for availability/efficiency improvement program in ASEAN		
		Complete	2	Evaluated export markets for power generation equipment in India, Pakistan, Nepal, Sri Lanka, Bangladesh		
14.	Cogeneration Plant Upgrading, NIS	In Progress	4	Assessing role of gas in space heating for cogeneration versus heat-only boilers	Monthly reports issued	Jun '93-present
D.	ENERGY MANAGEMENT AND OPERATIONS IMPROVEMENT					
15.	Capital Infrastructure Program Support Project, Manage and Perform, Philippines	Complete	5	Provided technical support to NAPOCOR in increasing private sector participation in power sector	Final report issued	Oct '91-July '92
16.	Energy Planning Support, NIS	Complete	6	Provided commodities procurement planning support to NIS/TF/EET	Report issued	Jun '93-Sep '93
		In Progress	1	Assessed potential of developing indigenous coal, oil, & gas resources in Armenia	Trip reports issued	Mar '93-Nov '93
		In Progress	1	Developed Fuel & energy assistance programs utilizing in-country supplies & imports in Armenia	Trip reports issued	Jul '93-Nov '93
		In Progress	2	Assessed in-country manufacturing capabilities to produce home heating, cooking stoves in Armenia	Trip reports issued	Mar '93-Nov '93
		In Progress	4	Assist in procurement of \$1.8M of energy production and energy efficient equipment/materials for Armenia	Trip reports issued	Jul '93-Nov '93
		In Progress	3	Assessed Georgia's infrastructure, port, railroad & gas pipeline	Trip reports issued	Jul '93-Nov '93
In Progress	5	Aided World Bank with pre-loan assessment of \$20-30M emergency loan	Trip reports issued	Sep '92-Dec '93		
17.	Oil Refineries Efficiency Improvements, NIS	Canceled	—	NIS/TF/EET canceled project	n/a	—

1 = Resource Assessment; 2 = Energy System Assessment; 3 = Prefeasibility Study; 4 = Tech Assistance/Tech Transfer; 5 = Tech Assistance/Institutional; 6 = Tech Assistance/energy Sector; 7 = Special Studies

OFFICE OF ENERGY & INFRASTRUCTURE ENERGY TECHNOLOGY INNOVATION PROJECT (ETIP) (CONT'D.)

ETIP ACCOMPLISHMENTS SUMMARY

1 October 1993
Revision 1

No.	Program Plan Task	Status	Associated ETIP Elements (s)	Associated ETIP Element(s) Description	Accomplishment Reports/Documentation	Start/Complete Date
18.	Power Loan Assessment and Management Support, Armenia	Complete	4	Provided technical assistance to evaluate existing condition & actions required to complete Hrazdan Unit No. 5	Draft final report issued	Jan '92-Feb '93
19.	Electric Utility Privatization, Dominican Republic	Complete	5	Provided technical assistance to Government to draft Privatization Strategy for electric sector	Draft report issued to USAID/Santo Domingo	Jun '93-Aug '93
E.	R&D/E&I SUPPORT					
20.	Administrative Support to R&D/E&I and Regional Bureaus	In Progress	7	Evaluating three project finance models for conversion to private power/cogeneration project finance model	n/a	Mar '93-present
		Complete	6	Developed & located U.S. sources to sell power generation equipment for emergency supply in Guatemala	Report issued	Feb '92-Mar '92
		Complete	2	Prepared energy assessments of 7 NIS republics for private power magazine	Article issued	Jun '93-Aug '93
		Complete	2	Conducted assessment of energy sector in Southern Africa for development of potential E&I project	Draft presentation on file	Apr '93-May '93
		Complete	4	Provided program support to ETP for NYMEX commodities training program in Russia	Report issued	Nov '92-Dec '92
		Complete	6	Scoped two demo projects with BEST to utilize cane residue, bagasse, or biomass for power generation in Egypt	Workshop in Egypt	Aug '91-Feb '92
		Complete	6	Inspected power plants with BEST for potential rice husks waste fuel power demonstration project in Egypt	Report issued	Aug '91-Feb '92
		Complete	5	Evaluated utilization of used U.S. steam turbines for power generation in Panama	Report on file	Dec '91-Jan '92
21.	Feasibility Fund Management, Promotion, and Technical Evaluations, Various A.I.D.-Assisted Countries	Complete	2	Performed international energy market overview for 3 EPDF briefing seminars	Report issued	Apr '92-Jul '92
		Complete	7	Surveyed Fund public sector window support	Report issued	Feb '93-Apr '93
		Complete	7	Developed Fund marketing plan	Report issued	Feb '92-May '92
		Complete	7	Drafted report on U.S. assistance in international projects and A.I.D.'s role	Report issued	Aug '92-Sep '92

1 = Resource Assessment; 2 = Energy System Assessment; 3 = Prefeasibility Study; 4 = Tech Assistance/Tech Transfer; 5 = Tech Assistance/Institutional; 6 = Tech Assistance/energy Sector; 7 = Special Studies

OFFICE OF ENERGY & INFRASTRUCTURE ENERGY TECHNOLOGY INNOVATION PROJECT (ETIP) (CONT'D.)

ETIP ACCOMPLISHMENTS SUMMARY

1 October 1993
Revision 1

No.	Program Plan Task	Status	Associate & ETIP Elements (s)	Associated ETIP Elements(s) Description	Accomplishment Reports/ Documentation	Start/Complete Date
F.	ENERGY TECHNOLOGY INNOVATION FEASIBILITY FUND					
22.	Fund Formation and Management, Various A.I.D.-Assisted Countries	Complete Complete Complete	7 7 7	Assessed consolidation of Fund Developed Fund application and instructions Developed Fund manual of procedures	Report issued Report issued Report issued	Dec '92-Feb '93 Feb '92-Jun '92 Nov '92-Jan '93
23.	Evaluate Applications and Fund Awards, Various A.I.D.-Assisted Countries	In Progress In Progress	3 3	Administrator awarded JTC funds for repowering study in Russia Evaluate Fund applications for public sector projects	n/a n/a	Apr '93-May '93 Feb '92-present
G.	UNPLANNED ACCOMPLISHMENTS					
24.	Technical Support, Energy and Environment Technical Assistance Planning, NIS	Complete	6	Provided input for draft strategy assessment	Report issued	
25.	NIS/TF/EET Energy Definitional Missions, NIS	Complete Complete Complete Complete	1 4 4 5	Prepared briefing books for 2 definitional missions to the NIS Participated in definitional missions to the NIS Developed implementation plan for technical assistance to NIS Developed implementation plan for institutional assistance to NIS	Briefing books issued Trip reports/Assessments issued Report issued Report issued	May '92-Jul '92 Jul '92-Aug '92 Jul '92-Sep '92 Jul '92-Sep '92
26.	Develop NIS U.S. Energy Industry Projects Data Base	Complete	7	Identified and compiled U.S. -NIS business relationships	Draft database on file	May '92-Aug '92
27.	Technical Support, Energy Technical Assistance, Mongolia	Complete	4	Assessed energy sector and drafted technical assistance plan	Draft plan issued	Jan '92-Apr '92

1 = Resource Assessment; 2 = Energy System Assessment; 3 = Prefeasibility Study; 4 = Tech Assistance/Tech Transfer; 5 = Tech Assistance/Institutional; 6 = Tech Assistance/energy Sector; 7 = Special Studies

APPENDIX F

**STATUS OF NINE ACTIVE
EPDF PROJECTS**

SUMMARY OF EPDF FEASIBILITY STUDIES AS OF AUGUST 1, 1993

Applicant	Country	Gross Capacity Rating (MW)	Fuel	Total Project Cost (\$000)	Project AID Study Funding (\$000)	Status
Hydroelectrica Aguas Zarcas	Costa Rica	11MW	Hydro	\$15,000	\$114.5	Study is completed and the applicant is negotiating with the IFC and a Costa Rican Bank for Financing.
Synergics	Dominican Republic	21.5MW	Oil	\$14,000	\$130	Study was completed. The government of the Dominican Republic (GDR) withdrew the original purchase agreement which had been executed due to pressure from the Inter-American Development Bank (IADB). As a result, the project sponsors are awaiting resolution of issues between the IADB and the GDR to pursue with project financing arrangements.

Applicant	Country	Gross Capacity Rating (MW)	Fuel	Total Project Cost (\$000)	Project AID Study Funding (\$000)	Status
International Energy Finance	Jamaica	65MW	Coal	\$130,000	\$100	The feasibility study is completed. The final report was submitted to the EPDF on July 27, 1993. A technical panel will be held for the evaluation of the study results. The project sponsors plan to pursue making project financing arrangements in September 1993.
Hidro Atlantica	Costa Rica	12MW	Hydro	\$13,000	\$40	The feasibility study is completed. The final report was received on July 16, 1993, and is currently being evaluated by the technical panel. A plan has been requested from the applicant to determine whether any assistance is required to secure financing for the project.

Applicant	Country	Gross Capacity Rating (MW)	Fuel	Total Project Cost (\$000)	Project AID Study Funding (\$000)	Status
Public Power of India/ Northeast Energy	India	500MW	Coal	\$615,000	\$200	Feasibility study funds were awarded in December 1992. The first deliverable is due to be received in September 1993. The feasibility study is scheduled to be completed by August 1994.
Cogentrix	India	500MW	Coal	\$598,000	\$200	Feasibility study funds were awarded in December 1992. The applicant is finalizing arrangements with respect to the proposed site selection, and transmission line data.
Energia Global	Costa Rica	22MW	Hydro	\$36,000	\$127	Contract was awarded in December 1992. The final reports corresponding to Don Pedro and Rio Volkan have been received, and are currently under review. Upon completion of review of reports, the sponsor will be required to provide a financing plan.

Applicant	Country	Gross Capacity Rating (MW)	Fuel	Total Project Cost (\$000)	Project AID Study Funding (\$000)	Status
Altresco/Harris Group	Philippines	400MW	Oil/Gas	\$500,000	\$200	The contract was awarded in December 1992. Phases I & II of the study have been completed and the final report is expected in the near future.
Joseph Technologies	Russia	340MW	Gas	\$100,000	\$140	The contract was awarded in May 1993. The study is currently underway.

APPENDIX G
EPDF BROCHURE

THRESHOLD CRITERIA

Threshold criteria for application to the Fund include:

- Applicant must be a U.S. company or a public agency from an A.I.D.-assisted country that is working with a U.S. company.
-
- Project must meet World Bank environmental standards.
-
- Technologies must be commercially proven.
-
- Project site must be identified.
-
- Applicant must provide for at least 50 percent of cost.

ENERGY PROJECT DEVELOPMENT FUND



TO OBTAIN APPLICATIONS

Applications for both public and private projects are available from:

Energy Project Development Fund
R&D/EI, Room 508, SA-18
Agency for International
Development
Washington, D.C. 20523-1810
Telephone: (703) 875-4052
FAX: (703) 875-4053
TELEX: RCA 248379

ENERGY

PROJECT

DEVELOPMENT

FUND

**UNITED
STATES
AGENCY FOR
INTERNATIONAL
DEVELOPMENT**

**OFFICE OF ENERGY
AND
INFRASTRUCTURE**

ENERGY PROJECT DEVELOPMENT FUND

ABOUT THE FUND

The Office of Energy and Infrastructure of the U.S. Agency for International Development announces the availability of funds for pre-feasibility and feasibility studies related to energy. Funds may be applied towards both private and publicly-owned energy projects in A.I.D.-assisted countries. The Fund may contribute up to 50 percent of the cost of the studies for these projects.

OBJECTIVES

The primary objectives of the Fund include:

- 1) to provide financial assistance for evaluating private and public energy projects in the developing world with priority on those that involve proven, environmentally acceptable and clean technologies; and
- 2) to assist private companies from the United States and public sector entities from A.I.D.-assisted countries to identify and develop projects that support sustainable and environmentally acceptable economic development and promote U.S. trade and investment.

WHAT IS ELIGIBLE?

It is expected that projects will employ commercially proven technologies.

Public Sector Projects

These projects must be publicly-owned and operated and must utilize some commercially proven innovative or advanced technology. Eligible projects may include:

- Clean coal technologies
- Energy conversion
- Advanced electric power generation
- Advanced energy transmission and distribution
- Energy related environmental technologies

Private Sector Projects

These projects must be owned or operated by the private sector and may include:

- Private power plants
- Private leasing and rehabilitation of energy facilities
- Contracting out energy/utility functions
- Privatization

WHO CAN APPLY?

Eligible applicants may include U.S. majority-owned:

- Private power developers
- Utilities and their subsidiaries
- Energy and environmental equipment suppliers
- Engineering firms

OR

- Developing country public utilities and other public sector entities working with U.S. companies.

COST SHARING

The Fund will share with eligible applicants up to 50 percent of the cost of feasibility studies and other related project development activities.

It is pertinent that the purpose of cost sharing is to create incentives for energy development activities. Projects are expected to exhibit a high potential for commercial implementation.

APPENDIX H

**INFORMATION AND APPLICATION PACKET
FOR THE ENERGY PROJECT
DEVELOPMENT FUND**

INFORMATION AND APPLICATION PACKET

FOR

ENERGY PROJECT DEVELOPMENT FUND

BEST AVAILABLE COPY

**Office of Energy and Infrastructure
U.S. Agency for International Development**

July 1992

TABLE OF CONTENTS

I. ENERGY PROJECT DEVELOPMENT FUND INFORMATION

II. INSTRUCTIONS FOR APPLICATIONS TO THE ENERGY PROJECT DEVELOPMENT FUND

ATTACHMENT A: EVALUATION CRITERIA

ATTACHMENT B: APPLICATION COVER SHEET

ATTACHMENT C: CERTIFICATION FORM

ATTACHMENT D: ENVIRONMENTAL ISSUES

WHERE TO OBTAIN FURTHER INFORMATION OR CLARIFICATION OF APPLICATION REQUIREMENTS & PROCEDURES

Interested parties may obtain additional information and assistance with the Application requirements and procedures of the FUND from the following location:

Energy Project Development Fund
A.I.D. Office of Energy & Infrastructure
R&D/EI, Room 508, SA-18
Washington, D.C. 20523-1810

Telephone: 703-875-4052
Fax: 703-875-4053

**I. ENERGY PROJECT DEVELOPMENT FUND
INFORMATION**

As part of its mission, the Office of Energy and Infrastructure of the U.S. Agency for International Development (A.I.D.) assists in alleviating, by environmentally acceptable means, the supply/demand gap in the energy sectors of developing countries. To accomplish this, the Office of Energy and Infrastructure (EI) has established the Energy Project Development Fund (FUND) to provide financial support for prefeasibility and feasibility studies leading to the development and application of environmentally-sound energy technologies designed to solve the energy problems of developing countries.

The primary objectives of the FUND are the following:

- 1) To provide financial assistance for prefeasibility and feasibility studies that evaluate public and private energy projects in the developing world with priority on those that involve proven, environmentally acceptable and clean technologies; and
- 2) To assist private companies from the United States and public sector entities from developing countries to identify and develop projects that support sustainable and environmentally acceptable economic development and promote U.S. trade and investment.

ELIGIBLE PROJECTS

The FUND can help finance prefeasibility and feasibility studies to determine the technical, economic, financial, legal and institutional viability of proposed energy and energy-related development projects.

PUBLIC SECTOR PROJECTS

These projects must be publicly-owned and operated and must utilize some commercially proven or advanced technology. Eligible projects may include:

- Clean coal technologies
- Energy conversion
- Advanced electric power generation
- Advanced energy transmission and distribution
- Energy related environmental control technologies

PRIVATE SECTOR PROJECTS

These projects must be owned or operated by the private sector and may include:

- Private power plants and other energy facilities
- Private leasing and rehabilitation of energy facilities
- Contracting out energy/utility functions
- Privatization

ELIGIBLE APPLICANTS

To apply to the FUND, the Applicant must be:

1. A U.S. company with a controlling ownership interest of not less than 51% held by U.S. citizens, such as energy and environmental equipment suppliers, engineering firms, utilities and their subsidiaries, and private power developers.
2. A public agency or other public sector entity from a developing country working with U.S. companies.

COST SHARING

The FUND may share with eligible applicants up to 50 percent of the cost of prefeasibility and feasibility studies. Applicants must provide written documentation that the remaining amount will be available from other private or public sources.

PROJECT FUNDING PROCEDURES

To apply to the FUND, interested parties should follow the procedure described below and illustrated in the flow chart (Figure 1).

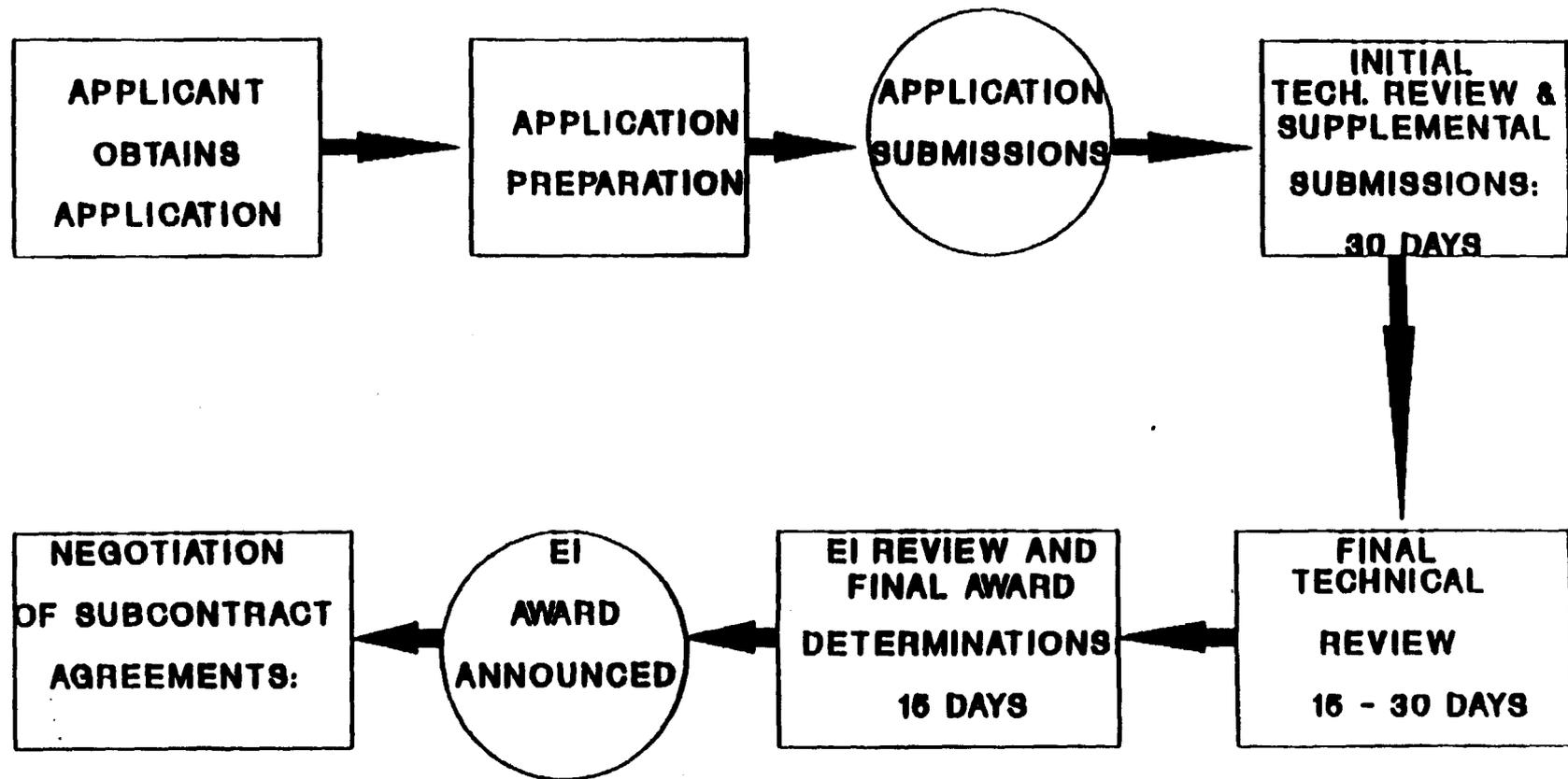
After obtaining the FUND application form, interested parties should contact the Office of Energy and Infrastructure to obtain advice about the eligibility of their proposed project, and how to fulfill the application requirements.

Having completed the Application, interested parties should submit (5) copies of the completed Application to the Fund Administrator (Price Waterhouse) at the address below. The Fund Administrator, with approval of EI, will establish a Technical Review Panel, which will review the Application. The Fund Administrator will be responsible for all formal communications with the Applicant. Proposed applications will be evaluated using the evaluation criteria set forth herein.

The Office of Energy and Infrastructure will announce the awards to successful Applicants. The number and size of awards will be subject to the availability of funds. After award, the Applicant will enter into an Assistance Agreement with Price Waterhouse. Price Waterhouse will disburse funds and monitor progress of the proposed activities in accordance with the executed Assistance Agreement.

The Applicant will undertake the prefeasibility or feasibility study according to the schedule, scope of work and budget agreed upon. The Fund Administrator will disburse funds based on a progress schedule, the receipt of deliverables and submittal of acceptable invoices. Eligible study costs are defined in the Assistance Agreement and will be in accordance with A.I.D. procurement regulations and guidelines. Generally, the final 25 percent of the monies from the FUND for each project will be released only after acceptable delivery of the completed study and submission of the necessary invoice.

APPLICATION PROCESS FLOWCHART



EI - Office of Energy and Infrastructure

APPLICATION EVALUATION CRITERIA

Generally, an application to the FUND must propose a commercially proven and environmentally sound energy project that supports sustainable economic development, minimizes environmental impact and promotes U.S. trade and investment in developing countries.

Applicants, if possible, should have prior and current experience with designing, manufacturing, constructing, developing, implementing, operating, and/or owning the type of project they propose to develop with the support of the FUND. Prior international and/or U.S. experience is preferred. The proposed project should provide an opportunity for the export of U.S. goods and services in the course of the project development, implementation and operation. Small and minority-owned businesses are especially encouraged to apply to the FUND.

An effort will also be made to support projects in each of A.I.D.'s geographic regions: Asia, Eastern Europe and Near East, Eastern Europe and the Newly Independent States, Latin America and the Caribbean, and Africa.

The evaluation is based on criteria for (1) basic threshold requirements, (2) project characteristics and (3) prefeasibility or feasibility study characteristics. Regarding the proposed project, the evaluation will consider its impact on economic development, the environment and U.S. trade and investment; the technical and financial soundness of the project and Applicant; the experience of the Applicant and related parties with similar projects; and the potential for the actual implementation potential of the project. Regarding the prefeasibility or feasibility study, the evaluation will focus on the study organization and scope of work, availability of cost sharing, the study schedule, and the experience of the Applicant and study team members.

THRESHOLD CRITERIA

The Threshold Criteria are listed below to assist potential applicants determine the basic eligibility of their projects.

All applicants and applications must meet the following threshold criteria:

- Applicant must be a U.S. company with a controlling ownership interest of not less than 51% held by U.S. citizens or a public agency from an A.I.D.-assisted countries that is working with a U.S. company.
- Proposed project must, at a minimum, meet the environmental standards of the International Bank for Reconstruction and Development (World Bank) and of the host country.
- Proposed project must be for a commercially proven technology and environmentally acceptable energy activity.
- Applicant must have a specific project site in an eligible country.
- Applicant must provide at least 50 percent of the cost of the prefeasibility or feasibility study.

PROJECT AND STUDY CRITERIA

Once an Application meets the Threshold Criteria, the proposed project and the prefeasibility or feasibility will be evaluated against additional criteria, which can be found in Attachment A: Evaluation Criteria.

WHERE TO OBTAIN FURTHER INFORMATION OR CLARIFICATION OF APPLICATION REQUIREMENTS & PROCEDURES

Interested parties may obtain additional information and assistance with the Application requirements and procedures of the FUND from the following location:

Energy Project Development Fund	Telephone:	703-875-4052
A.I.D. Office of Energy and Infrastructure	Fax:	703-875-4053
R&D/EL, Room 508, SA-18		
Washington, D.C. 20523-1810		

WHERE TO SEND APPLICATIONS

Applicants should send one (1) original and four (4) copies of completed applications to the following address:

Mr. Kami Rahbani	Telephone:	202-296-0800
Fund Administrator	Fax:	202-296-2785
Energy Project Development Fund		
Price Waterhouse		
1801 K Street, N.W.		
Washington, D.C. 20006		

II. INSTRUCTIONS FOR APPLICATIONS TO THE ENERGY PROJECT DEVELOPMENT FUND

TO OBTAIN FURTHER INFORMATION OR CLARIFICATION OF APPLICATION REQUIREMENTS & PROCEDURES CONTACT:

Energy Project Development Fund Telephone: 703-875-4052
A.I.D. Office of Energy & Infrastructure Fax: 703-875-4053
R&D/EI, Room 508, SA-18
Washington, D.C. 20523-1810

103

Please complete your application by providing the information specified below. Follow this outline in organizing your application and append additional information as necessary. Also, complete and submit the Application Cover Sheet (Attachment B) and the Certification Form (Attachment C).

Submit one (1) original and four (4) copies of the completed application to Price Waterhouse, the Fund Administrator, at the address provided above.

If you need additional information or clarification about the requirements and/or procedures of the FUND, contact the Energy Project Development Fund at telephone number (703) 875-4052 or fax number 703-875-4053.

NOTE: IF THE INFORMATION REQUESTED IN THIS APPLICATION IS NOT AVAILABLE BECAUSE IT WILL BE DEVELOPED DURING THE STUDY, PLEASE INDICATE WHERE APPROPRIATE.

I THRESHOLD INFORMATION

- A. Provide evidence that the applicant is a U.S. company with a controlling ownership interest of not less than 51% held by U.S. citizens or a public agency from an A.I.D.-assisted countries that is working with a U.S. company.
- B. Explain how the project will meet the environmental standards of the International Bank for Reconstruction and Development (World Bank) and of the host country, by completing Attachment D: Environmental Issues.
- C. Explain how the technology for the proposed project is commercially proven technology and environmentally acceptable.
- D. Identify the specific project site.
- E. Demonstrate that the applicant will provide at least 50% of the cost of the prefeasibility or feasibility study.

II PROJECT INFORMATION

A. TECHNICAL DATA

1. Technical Description of Proposed Project

Provide a technical description of the proposed project including, but not limited to, the following:

- Type of technology
- Site description and infrastructure requirements. Provide area and site maps, and pictures, if available.
- Fuel requirements
- Air, water, and solid waste discharges
- Other relevant information

2. Project Organization

Describe the proposed organizational structure of the project and submit an organization chart. Identify the Applicant and key project participants and their organizational relationships, including U.S. companies and government sponsoring agency, and others.

B. PROJECT IMPACT

1. Describe how the proposed study and project is consistent with the host country's formal development plans, policies, laws and regulations.
2. Explain the need for the project and the impact of the project on economic development, employment levels, and living conditions of host country residents.
3. Provide written evidence that the proposed project and study have the support of the host country and the appropriate public agency(ies).

Append copies of any legally binding commitments, memorandum of understanding, letters of intent, letters of support, permits, licenses, approvals or applications for such approvals from host country government officials.

4. Provide a breakdown of the estimated project cost content, identifying the source of supply of goods and services (i.e., from the U.S., host country, or other sources).

Proposed Project

Total Project Cost	\$ _____
Anticipated U.S. content	\$ _____
Anticipated host country content	\$ _____
Other content (Specify)	\$ _____

C. PROJECT FINANCIAL ASPECTS

1. Project Budget and Financial Data

Provide an estimate of the total cost of the project and a breakdown of these costs into major categories. For private projects, also provide a project financial plan (including sources of equity and debt, loan repayment terms, project cash flows, sale price of energy, etc.) and letters of interest or commitment from potential equity partners and lenders.

2. Applicant Financial Soundness

For private companies, provide copies of audited financial statements on the Applicant for the past three years and other pertinent materials to evidence the financial soundness of the Applicant.

D. PROJECT SCHEDULE

Provide a schedule for the completion of the development and implementation of the project.

E. EXPERIENCE OF APPLICANT AND RELATED PARTIES

Provide information on the experience of the Applicant and other parties involved in designing, developing, constructing, financing, and/or operating similar projects. Provide the names, locations, descriptions and references for previous projects by Applicant and study team members of a similar nature. Describe the nature of the work done.

F. IMPLEMENTATION POTENTIAL

1. State whether, or not, the proposed project is being, or will be, tendered by a public agency through a formal solicitation. If yes, attach a copy of the solicitation. If no, explain the situation.
2. Describe the specific agreements and/or actions that will result from the completion of the study activities, i.e., what additional approvals, permits, licenses, clearances, etc. will be needed to implement the project.
3. Describe how the private sector in the host country will be involved.
4. Provide evidence that the A.L.D. Mission in which the project is located has been informed of the project and the proposed study.

III. PREFEASIBILITY/FEASIBILITY STUDY INFORMATION

A. Scope of Work and Organization

1. Provide a detailed scope of work. If available, include the following study components and identify study team members responsible for, and participating, in, each component:

- Technical feasibility
- Economic/financial feasibility
- Environmental assessment
- Project management and organization
- Project operation and maintenance
- Other

Describe the proposed organizational structure of the study team and submit an organization chart, corresponding to the Study Scope of Work provided above. Identify responsibilities and reporting relationships.

STUDY FUNDING

Study Budget

Provide an estimated Study Budget with a breakdown corresponding to the components of the study as set forth in the Study Scope of Work.

2. **Source of Matching Funds**

Clearly identify the source of the matching funds and provide a letter certifying to their availability.

C. **SCHEDULE**

Provide a schedule for the completion of the study broken down into each of the subcomponents of the study.

D. **EXPERIENCE**

Provide examples of previous experience in the performance of studies similar in nature to the proposed study by the Applicant and study team personnel. Provide the names, locations, descriptions and references for previous projects by Applicant and study team members of a similar nature. Describe the nature of the work done.

ATTACHMENT A: EVALUATION CRITERIA

EVALUATION CRITERIA

I THRESHOLD CRITERIA

All applicants and applications must meet the following threshold criteria:

- A. Applicant must be a U.S. company with a controlling ownership interest of not less than 51% held by U.S. citizens or a public agency from an A.I.D.-assisted countries that is working with a U.S. company.
- B. Proposed project must, at a minimum, meet the environmental standards of the International Bank for Reconstruction and Development (World Bank) and of the host country.
- C. Proposed project must be for a commercially proven technology and environmentally acceptable energy activity.
- D. Applicant must have a specific project site in an eligible country.
- E. Applicant must provide at least 50 percent of the cost of the prefeasibility or feasibility study.

II PROJECT CRITERIA

A. PROJECT IMPACT

- 1. Need for environmentally acceptable energy in the host country and for the proposed project, and the potential contribution of project to solving energy and environmental concerns.
- 2. Export potential for U.S. goods and services.
- 3. Impact on the environment, especially of fuels and technology utilized.

B. PROJECT TECHNICAL ASPECTS

- 1. Use of indigenous resources.
- 2. Use of advanced and proven technology that is environmentally sound.
- 4. Appropriate sizing and efficiency of proposed project.
- 5. Appropriate siting.
- 6. Presence, or assurance of construction, of supporting infrastructure.

C. PROJECT FINANCIAL ASPECTS

1. Aggregate level and reasonableness of proposed project costs and energy prices, and for private projects, the reasonableness of energy prices and cash flow projections.
2. Strength of commitments from potential sources of capital financing (debt & equity).
3. Financial ability of project sponsor to complete the project.

D. PROJECT IMPLEMENTATION SCHEDULE

1. Reasonableness of project development/implementation schedule.

E. EXPERIENCE OF APPLICANT AND GOVERNMENT AGENCY SPONSORS

1. Depth of experience in performance of work similar to the proposed project (as evidenced by similar projects).
2. Level of international experience, especially in developing countries.

F. PROJECT IMPLEMENTATION POTENTIAL

1. Degree of host country policy commitment to the project as evidenced by presence of supportive laws, regulations, procedures and institutions.
2. Demonstrated level of support for the project by the host country government and government agency sponsors through legally binding agreements (such as power purchase agreements), firm and unambiguous letters of intent, permits, licenses, and other approvals or letters of commitment.
3. Level of host country private sector participation.
4. Level of previous project development work completed for the proposed project
5. Level of financial participation by Applicant or government agency sponsor.
6. Potential for near-term implementation of the project.

III. STUDY CRITERIA**A. STUDY ORGANIZATION AND SCOPE OF WORK**

1. Evidence of sound study organization.
2. Thoroughness and relevance of proposed scope of work.

B. STUDY FUNDING

1. Amount and verifiability of matching funds, if any, to finance the study.
2. Reasonableness of proposed budget.
3. Financial soundness and capability of the Applicant.

C. STUDY IMPLEMENTATION SCHEDULE

1. Reasonableness of study implementation schedule.

D. EXPERIENCE OF STUDY TEAM MEMBERS

1. Depth of experience of study team members in performing work similar to the proposed study.
2. Level of international experience, especially in developing countries.

ATTACHMENT B: APPLICATION COVER SHEET

ENERGY PROJECT DEVELOPMENT FUND

APPLICATION COVER SHEET

PROJECT NAME: _____

PROJECT LOCATION: _____

APPLICANT NAME: _____

PLACE OF INCORPORATION: _____

MAILING ADDRESS: _____

NAME OF CONTACT: _____

TITLE OF CONTACT: _____

TELEPHONE NUMBER: _____

FAX NUMBER: _____

PARENT COMPANY: _____

PLACE OF INCORPORATION: _____

ATTACHMENT C: CERTIFICATION FORM

...



CERTIFICATION FORM

(To be signed by a senior corporate officer with verifiable legal authority to commit the Applicant.)

I (Applicant) HEREBY CERTIFY THAT THE INFORMATION PROVIDED IN THIS APPLICATION IS TRUE AND CONTAINS NO FALSE STATEMENTS, TO THE BEST OF MY KNOWLEDGE.

SIGNATURE:

NAME:

TITLE:

DATE:

ATTACHMENT D: ENVIRONMENTAL ISSUES

ENVIRONMENTAL ISSUES

Please answer the following questions to the fullest extent possible and provide explanatory attachments, if available. If information on these matters is to be developed during the prefeasibility or feasibility study, please indicate.

I. Impact Identification

If known, will the proposed project meet the appropriate environmental standard of the International Bank for Reconstruction and Development (World Bank) and the host country? Provide supporting calculations.

Does the proposed project have an impact on any environmental sensitive areas? Explain.

What are the significant beneficial environmental effects of the project? Have the risks been evaluated? Explain.

Have any probable off-site effects (so-called upstream and downstream effects) been determined, including transboundary effects, and what is the time-lag before effects are exhibited? Explain.

II. Mitigation Measures

What mitigation measures are proposed and what alternative sites have been considered?

What lessons from previous similar projects will be incorporated into the environmental assessments of this project?

How will the study take into consideration the local populations and concerned groups and their interests? Is resettlement involved? What, if any, compensatory measures are planned?

III. Procedures

How have host-country and other environmental guidelines been taken into consideration?

Explain how the study will evaluate the beneficial and adverse environmental effects of the project.

How will host country authorities responsible for environmental protection be consulted in the preparation of the project? How do you plan to make the central authorities aware of the environmental impact of the project and have they approved the environmental measures to be included?

APPENDIX I
SAMPLE LETTERS TO EPDF

Mr. Ali Zavar
Fund Administrator
Energy Project Development Fund
Price Waterhouse
1801 K Street, N.W.
Washington, D. C. 20006

SUBJECT:

Dear Mr. Zavar:

In reference to the subject application and your subsequent technical review, it has been noted that you have Bechtel Corporation and K&M Engineering and Consulting Corporation under contract for technical assistance. Since both firms are competitors of The [redacted] and its subsidiaries, it is respectfully requested that you utilize other technical consultants in revising the [redacted] application.

Thank you for your consideration in this matter. If you have any questions or require additional information, please contact me.

Sincerely,

Per our discussion, information about this project will be maintained by Price Waterhouse, as Administrator for the Energy Project Development Fund, and AID, and possibly evaluated from a technical standpoint by DOE or an independent engineer (i.e., not Bechtel or K&M).

I look forward to hearing back from you shortly.

Respectfully,

APPENDIX J

**EPDF APPLICATION EVALUATION
FORM**

EVALUATION FORM FOR ENERGY PROJECT DEVELOPMENT FUND

APPLICANT: _____

PROJECT NAME: _____

DATE OF EVALUATION: _____

NAME OF EVALUATOR: _____

I. THRESHOLD CRITERIA

A.	51% U.S. Company (if private project) or Public Agency in AID Country	YES	NO	DK
B.	50% Cost Sharing	YES	NO	DK
C.	Meets Envir. Standards	YES	NO	DK
D.	Specific Project Site	YES	NO	DK
E.	Commercially Proven Technology	YES	NO	DK
F.	USAID Mission Notified	YES	NO	DK

COMMENTS:

II. PROJECT CRITERIA

A.	PROJECT IMPACT	HIGH	MED	LOW	NONE
1.	Need for power	3	2	1	0
2.	Export potential for U.S.	3	2	1	0
3.	Environmental impact	3	2	1	0
TOTAL POINTS =					_____

COMMENTS:

B.	TECHNICAL ASPECTS	HIGH	MED	LOW	NONE
1.	Fuel Reliability	3	2	1	0
2.	Indigenous fuel use	3	2	1	0
3.	Proven technology	3	2	1	0
4.	Approp. size & efficiency	3	2	1	0
5.	Appropriate siting	3	2	1	0
6.	Infrastructure available	3	2	1	0
TOTAL POINTS =					_____

COMMENTS:

C.	FINANCIAL ASPECTS	HIGH	MED	LOW	NONE
1.	Equity commitments	3	2	1	0
2.	Debt commitments	3	2	1	0
3.	Financial ability of project sponsor to complete proj.	3	2	1	0
4.	Power prices reasonable	3	2	1	0
5.	Budg./cash flow reasonable	3	2	1	0
TOTAL POINTS =					_____

COMMENTS:

D.	SCHEDULE	HIGH	MED	LOW	NONE
1.	Reasonableness of sched.	3	2	1	0
					TOTAL POINTS = _____

COMMENTS:

E.	EXPERIENCE	HIGH	MED	LOW	NONE
1.	With similar projects	3	2	1	0
2.	International experience	3	2	1	0
3.	Private power experience (for private window)	3	2	1	0
					TOTAL POINTS = _____

COMMENTS:

F.	IMPLEMENTATION POTENTIAL	HIGH	MED	LOW	NONE
1.	Policy commitment	3	2	1	0
2.	Govt./Util. support-LOI	3	2	1	0
3.	Host country pvt. sector	3	2	1	0
4.	Prev. project devel. work	3	2	1	0
5.	Level equity by Applicant or Government	3	2	1	0
6.	Near-term implementation	3	2	1	0
					TOTAL POINTS = _____

COMMENTS:

III. FEASIBILITY STUDY CRITERIA

A.	ORGANIZATION & SCOPE	HIGH	MED	LOW	NONE
1.	Soundness of organization	3	2	1	0
2.	Soundness of scope of work	3	2	1	0
					TOTAL POINTS = _____

COMMENTS:

B.	STUDY FUNDING	HIGH	MED	LOW	NONE
1.	Avail. of matching funds	3	2	1	0
2.	Reasonableness of budget	3	2	1	0
3.	Financial capability	3	2	1	0
					TOTAL POINTS = _____

COMMENTS:

C.	SCHEDULE	HIGH	MED	LOW	NONE
1.	Reasonableness of sched.	3	2	1	0
					TOTAL POINTS = _____

COMMENTS:

D.	EXPERIENCE	HIGH	MED	LOW	NONE
1.	With similar projects	3	2	1	0
2.	International experience	3	2	1	0
3.	Private power experience (for private window)	3	2	1	0
					TOTAL POINTS = _____

COMMENTS:

SCORING

CRITERIA	POINTS	x	WEIGHT	=	SCORE
II. PROJECT CRITERIA					
A. PROJECT IMPACT	_____	x	5	=	_____
B. TECHNICAL ASPECTS	_____	x	10	=	_____
C. FINANCIAL ASPECTS	_____	x	15	=	_____
D. SCHEDULE	_____	x	5	=	_____
E. EXPERIENCE	_____	x	10	=	_____
F. IMPLEMENTATION POTENTIAL	_____	x	15	=	_____
SUBTOTAL:					_____
III. FEASIBILITY STUDY CRITERIA					
A. ORGANIZ. & SCOPE	_____	x	15	=	_____
B. STUDY FUNDING	_____	x	10	=	_____
C. SCHEDULE	_____	x	5	=	_____
D. EXPERIENCE	_____	x	10	=	_____
SUBTOTAL:					_____
TOTAL SCORE:					_____

(NOTE -- PSED: Maximum points = 99; maximum score = 1,110.
 -- ETIP: Maximum points = 93; maximum score = 1,050.)
 An average score of 2 is generally required.

SUMMARY COMMENTS: