

PD-AAZ-096

TECHNOLOGY TRANSFER FOR ENERGY MANAGEMENT



PROJECT EVALUATION

**PREPARED FOR:
USAID MISSION
MANILA, PHILIPPINES**

**PREPARED BY:
LOUIS BERGER INTERNATIONAL, INC.
WASHINGTON, D.C.
U.S.A.**

**CHECCHI AND COMPANY CONSULTING, INC.
WASHINGTON, D.C.
U.S.A.**

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EXECUTIVE SUMMARY

The Technology Transfer for Energy Management (TTEM) Project was originally conceived by 1983 and a Project Identification Paper (PID) was prepared. The Project Paper (PP) was commenced in 1984 and completed and approved in April 1985. On May 31, 1985 the Philippines and U.S. Governments signed an agreement providing for \$3,000,000 in loans and \$2,000,000 in grants to support the TTEM project. While the Government of the Philippines (GOP) started work on documents required to satisfy the CPs initial project implementation activities moved slowly. After the presidential elections were announced in November 1985 the attention of GOP counterpart staff turned markedly to politics, and with the February 7, 1986 results the implementation activity came to a virtual halt until new GOP officials had been appointed. The new GOP Administration abolished the cabinet level Ministry of Energy and placed the functions of Bureau of Energy Utilization in a new Office of Energy Affairs reporting the President's office. An amended agreement was signed on August 30, 1986 in which the loan amount was replaced by a grant. A U.S. technical assistance contractor, Resource Management Associates (RMA), was selected and a contract was signed in December 1986. The Resident Advisor arrived in late February 1987. The TTEM Project Director and senior project staff were finally selected on October 30, 1987. All CPs were met on December 11, 1987. The project effectively started, therefore, in January 1988, over two and one-half years after the signing of the agreement between the governments. However, activity commenced after the arrival of the RMA Resident Advisor in February, 1987.

Since the 1973 oil crisis, the Philippines had undertaken a largely successful program of energy diversification described in Section 3. Nevertheless, the cost of oil imports had risen from \$187 million in 1972 to \$2.5 billion in 1980 though the volume had decreased. The Philippines had seen a period of major expansion during the 1970s. The Philippine economy was one of the worst victims of the world recession which resulted from the second oil shock. The assassination of former Senator Benigno Aquino on August 21, 1983 caused such a level of political turmoil that a massive capital flight ensued. In 1985, when the PP was issued and the Project Loan and Grant Agreement was signed, there was still an economic and foreign exchange crisis while the price of oil had fallen only marginally to just under \$28 a barrel. In the early part of 1986 the Marcos government was forced out following the election and was replaced by the current government under President Corazon Aquino. At the same time the OPEC pricing policies collapsed. Between the first and second quarter of 1986 the average price of oil dropped from \$22.38 a barrel to \$12.07 a barrel. At the current time, November 1988, the economic and political perspective has changed radically. OPEC is undergoing another period of turmoil with oil prices dropping. The Philippine economy appears to be taking off. While energy prices are down, lowering the concern on energy conservation, there are looming electrical power shortages.

The National Economic and Development Administration (NEDA) indicated that the emphasis in national development has shifted to areas outside Manila. The recent holding of the first TTEM sponsored seminar outside of Manila, in Cebu City, and the plant visits undertaken there appear to be a positive

response to this emphasis. Energy conservation is still a NEDA priority and therefore the TTEM Project is still relevant to GOP policies. However, it has not so far responded in any organized manner to the more immediate problem of a shortage of electrical power to sustain national development.

The TTEM Project is located within the Conservation Division of OEA. This division is responsible for a number of different projects in the energy conservation field including:

- TTEM Project
- US/ASEAN Project
- RUE (German aid) Project
- SAL TAC II (World Bank) Project
- UNDP/UNIDO Project

These projects have in part complementary and in part overlapping the TTEM Project. The TTEM Project's unique feature is the DLF program, financing demonstration projects in energy conservation. While there is informal cooperation between the personnel of the different projects encouraged by OEA, there is no formal mechanism of coordination. Such coordination is recommended to ensure that the data developed by each project are combined for effective planning and development of the overall energy conservation program of the Conservation Division. It is also suggested that the OEA develop a mechanism to coordinate the overall planning of its energy conservation activities with other institutions so that a coordinated effort be made to respond to national priorities such as the current shortage of electrical power and the necessary complementary actions be taken by other agencies to support the activities of the OEA projects. Each project could then be directed, within the limits of its charter, to respond to GOP's most pressing priorities.

The TTEM Project is located in the OEA Headquarters Building in Fort Bonafacio, a military encampment. This is not an ideal location because of difficulties of access. The Project has a USAID funded senior staff (paid relatively high salaries) under a Project Director responsible to the Head of the OEA Conservation Division. He has U.S. Project Consultant supplied long term by RMA and a staff supplied by the OEA consisting of both regular OEA employees and contract employees. This tiered structure is not conducive to harmonious personnel relationships. The staffing appears to overemphasize the technical aspects of the project while not placing sufficient emphasis on planning, information dissemination, promotion and finance.

Unfortunately, the Project seems to have lacked a clear sense of direction and consistent management since the beginning. Following the changes in the GOP, the TTEM project was assigned to the newly formed OEA in late 1986. When the RMA TTEM Resident Consultant arrived in February 1987 there was no TTEM Project Director, and so the consultant worked closely with the Chief of the Conservation Division who had responsibility for administering a number of energy conservation assistance projects. A TTEM Project Director was appointed in December 1987 after a long search. He resigned in June 1988, and another search was initiated for a new Director. In

October 1988, it was decided to elevate a member of the TTEM staff to be Project Director.

The GOP has met all the Conditions Precedent of the Loan and Grant Agreement and is providing the necessary local support for the project to function. We suggest that in the area of coordination with other energy conservation projects and other institutions as described above, it could increase its support and improve the project's effectiveness. There is concern whether the GOP is able to fund travel expenses of OEA staff between December and March. If such funding is not possible this will significantly limit the project's effectiveness.

There is some question as to extent of the industrial and commercial users' response to the TTEM Project as well as other energy conservation projects. We believe that this is because these projects have yet to establish themselves as viable sources of profitable assistance across the spectrum of Philippine industry. It is for this reason that we emphasize the promotional and marketing aspects of the project. The suggested selection and coordination of national priorities should also be seen in this light. In other words, if industry understands that the project will assist them with their most immediate problems rather future ones, they are more likely to respond enthusiastically.

The TTEM project does not appear to have made an impact on energy conservation in the specific technologies described in the PP. This appears to be more a listing of technologies used in the U.S. Though there are obvious needs for improvements in energy conservation in each area, there appear to be barriers to their implementation in the Philippines. Furthermore, they overlap the technologies being promoted by other projects. As a result the TTEM project has tended to search for useful energy conservation projects in an uncoordinated fashion. We suggest that there should be a more flexible approach consisting of determining priority and feasible areas of energy conservation on which to concentrate through the planning process suggested above, followed by coordinated effort by TTEM and other affected institutions to implement energy conservation in these areas.

The DLF appears to provide adequate funds and an attractive incentive to companies interested in taking advantage of the TTEM project. Many interviewed suggested that TTEM has not met its objectives because of shortcomings in the presentation and dissemination of TTEM information. It was widely felt that the TTEM project and the DLF were properly designed to encourage energy conservation in the Philippines, even though the companies that could benefit most from energy conservation have moved ahead with their programs uninfluenced by the TTEM project. It was also noted in interviews that energy conservation for companies less affected by energy costs was of a lower priority today because energy costs are now so much lower.

Nevertheless, a widespread feeling was expressed that many businesses in the Philippines could still benefit from the TTEM project if they become aware of its existence, provisions and benefits.

The amount of grant funds, approximately ₱55 million, appears adequate to fund at least 12 demonstration projects at the project maximum of ₱4.2 million or more likely 20 to 30 projects, since the loan requirements of many sub-projects are likely to be less than the maximum allowable.

The maximum five-year term permitted by DLF at a below market interest rate appears to have provided an adequate financial incentive to encourage qualified companies interested in installing energy conservation equipment to apply for a DLF loan. Applications for a DLF loan have come from some of the largest companies in the Philippines. These companies tend to benefit the least from a DLF loan, both in terms of spread and total interest cost savings, compared to other means of financing available to them, yet they have elected to qualify for a DLF sub-project.

Three obstacles confront some companies who might otherwise apply for DLF as reported in interviews with bank representatives.

- o First, the cost for a bank to process a DLF loan for a new customer would be too cumbersome and time-consuming to appeal to an otherwise qualified loan applicant. While there were no known cases of this problem occurring to date, it may have deterred some applicants. At the present time, there are four accredited banks for a DLF applicant to choose from, but it is important that the selection of accredited banks include banks like Planters Development Bank to assure a broader coverage of medium/large and medium size companies.
- o Second, many of the energy conservation projects being undertaken by the larger Philippine companies involve investments considerably greater than ₱4.2 million. In most cases, those companies have elected to bypass the benefits of the DLF program. In some other instances, such as PLDT and Benguet, they have selected a portion of their energy conservation program that qualifies under TTEM guidelines and have applied for a DLF sub-project for that portion of the project. This sub-project selection seemed to be the approach used in all the companies seeking DLF that were interviewed during this evaluation.
- o Third, regarding the buy-American/Philippine requirement, in many cases local companies wish to buy energy conservation equipment from Asian or European suppliers rather than seek to qualify for a DLF sub-project.

The TTEM Project does not appear to have made a concerted effort to locate and develop the capabilities of equipment manufacturers and vendors as well as consulting engineers. TTEM staff indicated a concern that they not appear to endorse any particular product or service. This is a valid concern, but techniques for overcoming it have been developed in the U.S. For example, some governmental agencies distribute lists of vendors with a specific statement on the list that the agency does not endorse any product or service on the list.

Of the ten sub-projects currently being processed, three are for technologies listed in the PP. One, though not a TTEM technology and not having a wide application, could be used to promote energy conservation in buildings. Two are for the use of agricultural wastes as a source of energy. While this is a worthwhile objective to conserve non-renewable energy resources, it is not clear that it is within the TTEM charter. If such a direction is to be taken it should be as part of an OEA directive. One, the replacement of diesel engines by electric motors, appears inappropriate at the time of a looming power shortage. Three are not considered by the evaluators to be appropriate technologies for the TTEM Project, as they are highly specialized applications. Overall, the selection of DLF sub-projects demonstrates the lack of direction of the TTEM Project and the weakness in marketing the DLF.

The TTEM Project does not appear to have made a concerted effort to locate and develop the capabilities of equipment manufacturers and vendors as well as consulting engineers. The concern expressed by the Secretary of State in the PID review that "when the project is implemented BEU will view their role as more operational, (i.e. doing technology demonstrations, energy audits, etc.) instead of developing the capability of the lending institutions or the A and E community to carry out the operational side of the project" (see PP Annex A) is still valid today though the BEU has been transformed into the OEA.

The TTEM Project has conducted, co-sponsored and participated in a number of seminars, workshops and other meetings. It has participated in the production of publications on energy conservation techniques. It publishes a newsletter, the "TTEM Channel" and it has prepared brochures to publicize its activities.

One evaluator attended a part of a presentation by a RMA short-term consultant at a seminar for the food industry. The evaluator was impressed by the high quality and clarity of the presentation, which was above average for similar presentations he has witnessed in the U.S. It appeared to be set at appropriate level for an audience with a technical background. The speaker himself was concerned that he may not have been reaching about one third of his audience. Nevertheless, there appears to be a considerable difficulty in targeting an audience in industry in the Philippines, and the use of high cost short-term experts may be unproductive. The RUE project uses films commercially produced by the British Ministry of Energy on energy conservation which they feel are appropriate for their purpose. (The evaluators have no comment on the effectiveness of this approach.)

The evaluators gave a cursory review of the publication "Waste Heat Recovery Systems" which was produced by ENMAP with the support of the TTEM Project. This is the proceedings of their seminar in February 1988. This publication seems to present a number of well presented papers on the subject. The number of local experts in the field raises a concern at the value of bringing expatriate short-term experts in such a field to the Philippines.

The TTEM Project commenced publication of a newsletter, the TTEM Channel, in January 1988. It is well presented, and its contents are of comparable quality to similar publications in the U.S. It does assist in promoting TTEM.

Information dissemination appears to be one the most difficult problems in achieving meaningful energy conservation goals. This difficulty is apparent in three areas: determining the best means of presentation, determining the level of information to be presented for specific target audiences, and the vehicles for reaching them. All the Philippine energy conservation projects are facing problems in this respect. To the extent that the TTEM project can address this problem successfully, it will have set itself apart from the other projects.

It has been disappointing to the evaluators that many of the people they met at interviews set up by TTEM personnel did not appear to have received any of the TTEM material and had very little knowledge of the project.

The TTEM Project currently has one junior Information Officer. It previously had two but, as mentioned in Section 3, the more senior officer left for a higher paying position. Should she prove herself, the current officer is likely to follow suit, as she is at the bottom of the salary structure. It is strongly recommended that this function be given higher status and upgraded and someone with wide experience information dissemination techniques appropriate for the Philippines be brought in.

The Technical Assistance Contractor, Resource Management Associates, Inc. (RMA) of Madison, Wisconsin, were awarded their contract in December 1986. The Project Consultant arrived in Manila in February 1987. The evaluators feel that after his presence for nearly two years and after the participation of nine short-term experts, the results of RMA's participation are nebulous.

The role of the Resident Consultant has been circumscribed by the fact since he arrived there have three Chiefs of the Conservation Division. That the TTEM Project Director and senior staff were not appointed until late 1987 and there has already been a change of director with an intervening gap and there has been some reorganization and change of responsibilities at USAID. Despite this, he has contributed significantly to the achievements of the TTEM project to date.

The results of the short-term consultant visits have been disappointing. There appear to be insurmountable problems in the use of expatriate experts and the greater dependence on local experts is highly recommended for technical support of the project. The establishment of the administrative procedures to facilitate their use should be given high priority.

USAID could assist the TTEM project achieve its goals by taking the following actions:

- o First, it should seek strengthened leadership for the TTEM project.

- o Second, USAID should request to review a business plan for the TTEM project for 1989 that will include any proposed organization changes, a detailed program for marketing the TTEM/DLF project and procedures for implementation and post-implementation follow-up.
- o Third, USAID should meet with the TTEM Steering Committee and to seek renewed cooperation from the members, especially the private sector organization members, to actively promote the TTEM project intended when TTEM was established.
- o Fourth, USAID could coordinate with the U.S. Embassy Commercial Section, TTEM staff and RMA to assure the availability of a list of U.S. suppliers of qualifying energy saving equipment and their Philippine agents.

OEA should be encouraged to provide an effective coordinating mechanism for the different energy conservation projects under its control. Changes such as having a central data bank where records of activities are maintained, a common reporting form on site visits ensuring the compilation of essential information for policy making and strategy development, the existence of a common library and holding of regular meetings between project heads under OEA supervision could assist in improving the effectiveness of these projects.

The current TTEM senior staff under Project Director seems competent to direct the marketing of the DLF and to undertake technical evaluations of proposed projects and to carry out the administrative work necessary. It is recommended that the Project Director be given greater responsibility and accountability for the day-to-day direction of the project including the selection of the new Project Consultant; the selection and scheduling of short-term consultants, both expatriate and local; the selection and organization of TTEM staff and the promotion of TTEM activities including the preparation of TTEM publications, meetings, style of correspondence and other promotional activities.

Careful consideration should be given in the selection of a replacement for the current RMA Project Consultant who is completing his current contract. In the opinion of the evaluators, the Project Consultant should be capable of providing planning support to OEA in preparing policy directives to the TTEM project. This will include both the identification of appropriate fields in which the project should operate and preparation of an organizational framework.

However, it is recommended that the Project Director should have prime responsibility for defining the role and capabilities sought of the Project Consultant. It is recommended that RMA be given the prime responsibility (and accountability) for the selection of the individual.

The Project Consultant should be provided with a locally hired administrative assistant to relieve him of some of the administrative work load and increase his effectiveness.

INTRODUCTION

The methodology for the preparation of this evaluation is described in Appendix A. The report follows the scope of work (Appendix D) in the USAID task order. Sections 3 through 12 reflect the items in that scope of work. Section 1 provides a project history for the reader to be able to understand the context of the evaluation. Section 2 gives a short history of contemporary economic and political events during the period of the development of the project to provide the reader with understanding of some of the external events which might have affected it. Section 13 sums up the report's conclusions while Section 14 sums up its recommendations. In addition to the methodology, the appendices include a bibliography of the documents inspected by the evaluators and a list of the people they interviewed or with whom they discussed the project. The U.S. Contractor's Resident Consultant provided a breakdown of his time and a description of his duties which is included as Appendix E. Comments were received from the Office of Energy Affairs of the Government of the Philippines, and the U.S. Contractor commented on the draft report. These comments are included as Appendices F and G respectively. USAID made oral comments during the evaluators' presentations to them. Additions and changes in this final report reflect these comments. In addition, the evaluators have included an item by item response to each comment in Appendix H.

The evaluators realized that the evaluation was not necessarily welcome at this time at OEA. Nevertheless, they received a very cordial reception and were given every assistance from the OEA, project staff and the U.S. Contractor's staff and they wish to express their appreciation to all concerned. In addition, they received a high level of cooperation and assistance from all the people listed in Appendix C. In particular, they wish to record their appreciation to the Energy Management Association of the Philippines for taking the trouble to mail a survey to its members who were listed as receiving technical assistance from the project. Unfortunately, insufficient responses were received at the time of the completion of the report to have a significant impact on its contents. The evaluators also wish to thank all those members of the USAID Mission in Manila who provided them with guidance and assistance.

A.I.D. EVALUATION SUMMARY - PART I

1 BEFORE FILLING OUT THIS FORM READ THE ATTACHED INSTRUCTIONS.
2 USE LETTER QUALITY TYPE NOT DOT MATRIX TYPE

IDENTIFICATION DATA

A. Reporting A.I.D. Unit. Mission or AID/W Office _____ (ES# _____)	B. Was Evaluation Scheduled in Current FY Annual Evaluation Plan? Yes <input type="checkbox"/> Slipped <input type="checkbox"/> Ad Hoc <input type="checkbox"/> Evaluation Plan Submission Date: FY ___ Q ___	C. Evaluation Timing Interim <input type="checkbox"/> Final <input type="checkbox"/> Ex Post <input type="checkbox"/> Other <input type="checkbox"/>
--	--	---

D. Activity or Activities Evaluated (List the following information for project(s) or program(s) evaluated, if not applicable list title and date of the evaluation report.)

Project No	Project /Program Title	First PROAG or Equivalent (FY)	Most Recent PACD (Mo/Yr)	Planned LOP Cost (000)	Amount Obligated to Date (000)

ACTIONS

E. Action Decisions Approved By Mission or AID/W Office Director	Name of Officer Responsible for Action	Date Action to be Completed
Action(s) Required		

(Attach extra sheet if necessary)

APPROVALS

F. Date Of Mission Or AID/W Office Review Of Evaluation: _____ (Month) _____ (Day) _____ (Year)

G. Approvals of Evaluation Summary And Action Decisions:

	Project/Program Officer	Representative of Borrower/Grantee	Evaluation Officer	Mission or AID/W Office Director
Name (Typed)				
Signature				
Date				

: 1 X

ABSTRACT

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

The evaluation of the Technology Transfer for Energy Management (TTEM) Project was undertaken in November 1988 by a two-person evaluation team who spent three weeks in Manila. This project is one of a number of energy conservation projects under the direction of the Office of Energy Affairs of the Government of the Philippines. It has two components, technical assistance and demonstration projects. The demonstration projects encouraged a demonstration loan fund (DLF) which provides financing at administration in the Philippines and the re-organization of energy function within the government. It effectively started some two and half years after the signing of the original loan and grant agreement. Therefore, at the time of this mid-course evaluation, the project is getting off the ground in certain key respects. Specifically, at the time of evaluation no loans under the DLF have been closed and its potential for promoting energy conservation has not been established. The evaluation does, however, analyze its demonstrated strengths and weaknesses. It discusses the problems of its integration into an overall strategy for energy conservation in the Philippines, the direction versus independence it needs, the emphasis needed in planning and marketing versus engineering, and strengths and weaknesses of the U.S. Contractor's support.

C O S T S

I. Evaluation Costs

1. Evaluation Team		Contract Number OR TDY Person Days	Contract Cost OR TDY Cost (U.S. \$)	Source of Funds
Name	Affiliation			
R. Andrew Belloch	Louis Berger International, Inc.			
William Pugh	Checchi and Company Consulting, Inc.			
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:

- Purpose of evaluation and methodology used
- Purpose of activity(ies) evaluated
- Findings and conclusions (relate to questions)
- Principal recommendations
- Lessons learned

Mission or Office:

Date This Summary Prepared:

Title And Date Of Full Evaluation Report:

Executive Summary and report attached.

S U M M A R Y (Continued)

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.)

COMMENTS

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

INSTRUCTIONS FOR COMPLETING AND SUBMITTING "A.I.D. EVALUATION SUMMARY"

This form has two parts. Part I contains information to support future A.I.D. management action, and to process the evaluation into A.I.D.'s automated "memory". Part II is a self-contained summary of key elements of the full evaluation report; it can be distributed separately to interested A.I.D. staff.

WHAT WILL THIS FORM BE USED FOR?

- Record of the decisions reached by responsible officials, so that the principals involved in the activity or activities evaluated are clear about their subsequent responsibilities, and so that headquarters are aware of anticipated actions by the reporting unit.
- Notification that an evaluation has been completed, either as planned in the current Annual Evaluation Plan or for *ad hoc* reasons.
- Summary of findings at the time of the evaluation, for use in answering queries and for directing interested readers to the full evaluation report.
- Suggestions about lessons learned for use in planning and reviewing other activities of a similar nature. This form as well as the full evaluation report are processed by PPC/CDIE into A.I.D.'s automated "memory" for later access by planners and managers.

WHEN SHOULD THE FORM BE COMPLETED AND SUBMITTED? After the Mission or A.I.D./W office review of the evaluation, and after the full report has been put into a final draft (i.e., all pertinent comments included). The A.I.D. officer responsible for the evaluation should complete this form. Part of this task may be assigned to others (e.g., the evaluation team can be required to complete the Abstract and the Summary of Findings, Conclusions, and Recommendations). The individual designated as the Mission or A.I.D./W evaluation officer is responsible for ensuring that the form is completed and submitted in a timely fashion.

WHERE SHOULD THE FORM BE SENT? A copy of the form *and attachment(s)* should be sent to each of the following three places in A.I.D./Washington:

- The respective Bureau Evaluation Office
- PPC/CDIE/DI/Acquisitions, Room 209 SA-18 (Note: If word processor was used to type form, please attach floppy disk, labelled to indicate whether WANG PC, WANG OIS or other disk format.)
- SER/MO/CPM, Room B930 NS (please attach A.I.D. Form 5-18 or a 2-way memo and request duplication and standard distribution of 10 copies).

HOW TO ORDER ADDITIONAL COPIES OF THIS FORM: Copies of this form can be obtained by sending a "Supplies/Equipment/Services Requisition" (A.I.D. 5-7) to SER/MO/RM, Room 1264 SA-14 in A.I.D./Washington. Indicate the title and number of this form ("A.I.D. Evaluation Summary", A.I.D. 1330-5) and the quantity needed.

PART I (Facesheet and Page 2)

A. REPORTING A.I.D. UNIT: Identify the Mission or A.I.D./W office that initiated the evaluation (e.g., U.S.A.I.D./Senegal, S&T/H). Missions and offices which maintain a serial numbering system for their evaluation reports can use the next line for that purpose (e.g., ES# 87/5).

B. WAS EVALUATION SCHEDULED IN CURRENT FY ANNUAL EVALUATION PLAN? If this form is being submitted close to the date indicated in the current FY Annual Evaluation Plan (or if the final draft of the full evaluation report was submitted close to that date), check "yes". If it is being submitted late or as carried over from a previous year's plan, check "slipped". In either case, indicate on the next line the FY and Quarter in which the evaluation was initially planned. If it is not included in this year's or last year's plan, check "ad hoc".

C. EVALUATION TIMING: If this is an evaluation of a single project or program, check the box most applicable to the timing of the evaluation relative to the anticipated life of the project or program. If this is the last evaluation expected to inform a decision about a subsequently phased or follow-on project, check "final", *even though the project may have a year or more to run before its PACD*. If this is an evaluation of more than a single project or program, check "other".

D. ACTIVITY OR ACTIVITIES EVALUATED: For an evaluation covering more than four projects or programs, only list the title and date of the full evaluation report.

E. ACTION DECISIONS APPROVED BY MISSION OR A.I.D./W OFFICE DIRECTOR: What is the Mission or office going to do based on the findings, conclusions, and recommendations of the evaluation; when are they going to do it; and who will be responsible for the actions required? List *in order of priority or importance* the key actions or decisions to be taken, unresolved issues and any items requiring further study. Identify as appropriate A.I.D. actions, borrower/grantee actions, and actions requiring joint efforts. Indicate any actions that are preliminary pending further discussion or negotiation with the borrower/grantee.

F. DATE OF MISSION OR A.I.D./W OFFICE REVIEW OF EVALUATION: Date when the internal Mission or office review was held or completed.

G. APPROVALS OF EVALUATION SUMMARY AND ACTIONS DECISIONS: As appropriate, the ranking representative of the borrower/grantee can sign beside the A.I.D. Project or Program Officer.

H. EVALUATION ABSTRACT: This one-paragraph abstract will be used by PPC/CDIE to enter information about the evaluation into A.I.D.'s automated "memory". It should invite potentially interested readers to the longer summary in Part II and perhaps ultimately to the full evaluation report. It should inform the reader about the following:

- If the evaluated activity or activities have characteristics related to the reader's interests.
- The key findings, conclusions, and lessons.
- An idea of the research methods used and the nature/quality of the data supporting findings.

Previous abstracts have often been deficient in one of two ways:

- Too much information on project design, implementation problems, and current project status discourages readers before they can determine if there are important findings of interest to them.
- A "remote" tone or style prevents readers from getting a real flavor of the activity or activities evaluated; progress or lack of progress; and major reasons as analyzed by the evaluation.

In sequential sentences, the abstract should convey:

- The programming reason behind the evaluation, and its timing (e.g., mid-term, final);
- The purpose and basic characteristics of the activities evaluated;
- A summary statement of the overall achievements or lack thereof to date;
- A picture of the status of the activities as disclosed in the full evaluation report;
- An idea of the research method and types of data sources used by the evaluators;
- The most important findings and conclusions; and key lessons learned.

Avoid the passive tense and vague adjectives. Where appropriate, use hard numbers. (An example of an abstract follows; "bullets" may be used to highlight key points).

EXAMPLE OF AN ABSTRACT

The project aims to help the Government of Zaire (GOZ) establish a self-sustaining primary health care (PHC) system in 50 rural health zones (RHZ). The project is being implemented by the Church of Christ in Zaire and the GOZ's PHC Office. This mid-term evaluation (8/81-4/84) was conducted by a GOZ-USAID/Z team on the basis of a review of project documents (including a 4/84 project activity report), visits to nine RHZ's, and interviews with project personnel. The purpose was to clarify some uncertainties about the initial design and set future priorities for activities. The major findings and conclusions are:

- This well-managed and coordinated project should attain most objectives by its 1986 end.
- Progress has been good in establishing RHZ's, converting dispensaries into health centers, installing latrines (over double the target), and training medical zone chiefs, nurses, and auxiliary health workers. Long-term training has lagged however, and family planning and well construction targets have proven unviable.
- The initial assumption that doctors and nurses can organize and train village health committees seems invalid.
- User fees at health centers are insufficient to cover service costs. A.I.D.'s PRICOR project is currently studying self-financing procedures.
- Because of the project's strategic importance in Zaire's health development, it is strongly recommended to extend it 4-5 years and increase RHZ and health center targets, stressing pharmaceutical/medical supplies development and regional Training for Trainers Centers for nurses, supervisors, and village health workers.

The evaluators noted the following "lessons":

- The training of local leaders should begin as soon as the Project Identification Document is agreed upon.
- An annual national health conference spurs policy dialogue and development of donor sub-projects.
- The project's institution-building nature rather than directly service nature has helped prepare thousands of Zairois to work with others in large health systems.

I. EVALUATION COSTS: Costs of the evaluation are presented in two ways. The first are the cost of the work of the evaluation team per se. If Mission or office staff serve as members of the team, indicate the number of person-days in the third column. The second are the indirect estimated costs incurred by involvement of other Mission/Office and borrower/grantee staff in the broader evaluation process, including time for preparations, logistical support, and reviews.

PART II (Pages 3-6)

J. SUMMARY OF EVALUATION FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS: The following reflects a consensus among A.I.D.'s Bureaus on common elements to be included in a summary of any evaluation. The summary should not exceed the three pages provided. It should be self-contained and avoid "in-house" jargon. Spell out acronyms when first used. Avoid unnecessarily complicated explanations of the activity or activities evaluated, or of the evaluation methodology; the interested reader can find this information in the full evaluation report. Get all the critical facts and findings into the summary since a large proportion of readers will go no further. Cover the following elements, preferably in the order given:

1. Purpose of the activity or activities evaluated. What constraints or opportunities does the loan and/or grant activity address; what is it trying to do about the constraints? Specify the problem, then specify the solution and its relationship, if any, to overall Mission or office strategy. State logframe purpose and goal, if applicable.

2. Purpose of the evaluation and methodology used. Why was the evaluation undertaken? Briefly describe the types and sources of evidence used to assess effectiveness and impact.

3. Findings and conclusion. Discuss major findings and interpretations related to the questions in the Scope of Work. Note any major assumptions about the activity that proved invalid, including policy related factors. Cite progress since any previous evaluation.

4. Principal recommendations for this activity and its offspring (in the Mission country or in the office program). Specify the pertinent conclusions for A.I.D. in design and management of the activity, and for approval/disapproval and fundamental changes in any follow-on activities. *Note any recommendations from a previous evaluation that are still valid but were not acted upon.*

5. Lessons learned (for other activities and for A.I.D. generally). This is an opportunity to give A.I.D. colleagues advice about planning and implementation strategies, i.e., how to tackle a similar development problem, key design factors, factors pertinent to management and to evaluation itself. There may be no clear lessons. Don't stretch the findings by presenting vague generalizations in an effort to suggest broadly applicable lessons. If items 3-4 above are succinctly covered, the reader can derive pertinent lessons. On the other hand, don't hold back clear lessons even when these may seem trite or naive. Address:

- Project Design Implications. Findings/conclusions about this activity that bear on the design or management of other similar activities and their assumptions.
- Broad action implications. Elements which suggest action beyond the activity evaluated, and which need to be considered in designing similar activities in other contexts (e.g., policy requirements, factors in the country that were particularly constraining or supportive).

NOTE: The above outline is identical to the outline recommended for the Executive Summary of the full evaluation report. At the discretion of the Mission or Office, the latter can be copied.

K. ATTACHMENTS: Always attach a copy of the full evaluation report. A.I.D. assumes that the bibliography of the full report will include all items considered relevant to the evaluation by the Mission or Office. **NOTE:** if the Mission or Office has prepared documents that (1) comment in detail on the full report or (2) go into greater detail on matters requiring future A.I.D. action, these can be attached to the A.I.D. Evaluation Summary form or submitted separately via memoranda or cables.

L. COMMENTS BY MISSION, AID/W AND BORROWER/GRANTEE: This section summarizes the comments of the Mission, AID/W Office, and the borrower/grantee on the full evaluation report. It should enable the reader to understand their respective views about the usefulness and quality of the evaluation, and why any recommendations may have been rejected. It can cover the following:

- To what extent does the evaluation meet the demands of the scope of work? Does the evaluation provide answers to the questions posed? Does it surface unforeseen issues of potential interest or concern to the Mission or Office?
- Did the evaluators spend sufficient time in the field to fully understand the activity, its impacts, and the problems encountered in managing the activity?
- Did any of the evaluators show particular biases which staff believe affected the findings? Avoid ad hominem discussions but cite objective evidence such as data overlooked, gaps in interviews, statements suggesting a lack of objectivity, weaknesses in data underlying principle conclusions and recommendations.
- Did the evaluation employ innovative methods which would be applicable and useful in evaluating other projects known to the Mission or Office? Note the development of proxy measures of impact or benefit; efforts to construct baseline data; techniques that were particularly effective in isolating the effects of the activity from other concurrent factors.
- Do the findings and lessons learned that are cited in the report generally concur with the conclusions reached by A.I.D. staff and well-informed host country officials? Do lower priority findings in the evaluation warrant greater emphasis?

SECTION 1

PROJECT HISTORY

The Technology Transfer for Energy Management (TTEM) Project was originally conceived by 1983 when a Project Identification Paper (PID) was prepared. The Project Paper (PP), commenced in 1984, was completed and approved in April 1985. On May 31, 1985 the Philippines and U.S. Governments signed an agreement providing for \$3,000,000 in loans and \$2,000,000 in grants to support the TTEM project.

This agreement included a number of conditions precedent (CP) for the agreement to come into effect and the project to be funded. these included:

- o The selection of a U.S. technical contractor.
- o Assignment of staff to the project by the Philippines Ministry of Energy.
- o The establishment of a project Steering Committee.
- o A memorandum of understanding be executed between the Philippine Chamber of Commerce and Industry, the Energy Management Association of the Philippines, the Banker's Association of the Philippines and the Bureau of Energy Utilization (BEU) of the Ministry of Energy detailing the roles and responsibilities of each in the implementation of the project.
- o A Master Agreement has been executed between the Central Bank (CB) and BEU detailing roles and responsibilities of each with respect to the administration of the Project's Demonstration Loan Component.
- o The preparation of a policy manual approved by USAID relative to the Demonstration Loan Fund.

The PP envisioned that the CPs would be met by November 1985.

While the Government of the Philippines (GOP) started work on documents required to satisfy the CPs, initial project implementation moved slowly.

After the presidential elections were announced in November 1985 the attention of GOP counterpart staff turned markedly to politics. With the February 7, 1986 results the implementation activity came to a virtual halt until new GOP officials had been appointed.

The new GOP Administration abolished the cabinet level Ministry of Energy and placed the functions of BEU in a new Office of Energy Affairs reporting the President's office.

An amended agreement was signed on August 30, 1986 in which the loan amount was replaced by a grant.

A U.S. technical assistance contractor, Resource Management Associates (RMA) was selected and a contract was signed in December 1986. The Project Consultant arrived in late February 1987.

The TEM Project Director and senior project staff were approved on October 20, 1987.

All CPs were met on December 11, 1987.

The project effectively started, therefore, at the end of 1987, over two and one half years after the signing of the agreement between the governments though activity commenced after the arrival of the RMA Project Consultant in February, 1987.

SECTION 2

ECONOMIC, POLITICAL AND SOCIAL CONTEXT OF THE PROJECT

At the time that the PID was being prepared in 1983 oil prices were falling from their peak in the late 1970s. The average price of crude oil fell from \$31.42 a barrel in the first quarter of 1983 to \$28.62 a barrel in the last quarter. The signs of the impending oil glut and the collapse of OPEC were not yet largely recognized.

Since the 1973 oil crisis, the Philippines had undertaken a largely successful program of energy diversification described in Section 3. Nevertheless, the cost of oil imports had risen from \$187 million in 1972 to \$2.5 billion in 1980 even though the volume had decreased.

The Philippines had seen a period of major expansion during the 1970s. GNP had been increasing by about 6% per annum, average inflation was a relatively mild 14% per annum, the rate of underemployment was a little over 10% while industrial production rose at an annual rate of over 10%.

The Philippine economy was one of the worst victims of the world recession which resulted from the second oil shock in the late 1970s. Faced with increased costs of oil imports, declining world values of its major export crops, and a steep rise in the interest on its foreign borrowings, the country experienced its worst balance of payments crisis at the end of 1982.

The assassination of former Senator Benigno Aquino on August 21, 1983 caused such a level of political turmoil that a massive capital flight ensued. In October 1983, the GOP announced that it could not pay its foreign debts and asked for a moratorium from some 483 creditors. The comments of the State Department on the project PID were sent in November 1983.

During 1984, the Philippine economy went into a tailspin as a result of a severe foreign exchange crisis. For all of 1984, the country had barely enough foreign exchange to import food and oil. Oil prices meanwhile remained relatively stable in the \$28 to \$29 a barrel range.

In 1985, when the PP was issued and the Project Loan and Grant Agreement was signed, there was still an economic and foreign exchange crisis while the price of oil had fallen only marginally to just under \$28 a barrel. At this period any form of foreign exchange, loan or grant, was welcomed by the GOP, while at same time the U.S. government was distancing itself from the Marcos government.

In the early part of 1986 the Marcos government was forced out following the election and was replaced by the current government under President Corazon Aquino. During the same period the OPEC pricing policies collapsed. Between the first and second quarter of 1986 the average price of oil dropped from \$22.38 a barrel to \$12.07 a barrel.

The Aquino Administration was immediately faced with an overwhelming problem of foreign debt and it adopted a policy of accepting only aid in the form of grants as opposed to loans. The Project Loan and Grant Agreement was amended on August 30, 1986 to replace the loan component with a grant and a basis for the project to proceed was established.

At the current time, November 1988, the economic and political perspective has changed radically. OPEC is undergoing another period of turmoil with oil prices dropping. The Philippine economy appears to be taking off. Plants that recently were having difficulty in sustaining a single shift a day are now operating at full capacity on three shifts. The focus of industrialists is how to increase production to meet market demands.

While energy prices are down, lowering the concern on energy conservation, there are looming electrical power shortages. Though the National Power Corporation admitted only to shortages in Luzon, power is reported to be cut off to plants for up to four hours a day in Cebu. The focus of priorities has decidedly shifted, while the long term goal of energy conservation has not been lost. As will be discussed in the body of the report, the TEM Project has not responded to this new situation.

SECTION 3

APPROPRIATENESS OF THE PROJECT

This section examines the TTEM project in the context of the current economic priorities of the Philippines, the present energy priorities of the country, and the responsibilities of the Conservation Division/OEA for coordinating foreign assisted energy conservation projects as well as the overall organization of the project.

Current Economic Priorities of the Philippines

The current economic priorities of the GOP were determined at a meeting with the National Economic and Development Authority (NEDA) where it was indicated that there is currently a greater emphasis on development outside the Manila area in current GOP planning. Recent economic growth in Cebu, the second largest city in the Philippines, is seen as a positive evolution. The TTEM project has not undertaken any activities outside the Manila area until recently. In July 1988, a marketing trip was undertaken by TTEM senior staff to Cebu at which some plants were visited. This has been followed by a seminar given in Cebu City on November 16, 1988 during the evaluation. The seminar was followed by two days of plant visits by two technical teams. This redirection of the TTEM project outside Manila responds to the emphasis of NEDA.

Present Energy Priorities of the Philippines

The energy priorities of the GOP were established at meetings with Attorney De La Ruz, Executive Director of OEA and with NEDA. The Ministry of Energy (MOE) was described as one of the more successful ministries under the Marcos regime. When the oil crisis hit the Philippines in 1973, the country was dependent on foreign oil for 92% of its energy supplies. A significant effort was made to convert to domestic energy sources such as coal and geothermal energy. Domestic coal production has increased from 40,000 metric tons (MT) in 1973 to 1,200,000 MT in 1987. In addition 1,200,000 MT were imported as a substitute for oil. With 894 MW installed capacity, the Philippines has become the second largest producer of geothermal energy in the world after the U.S. There has been considerable exploration for oil but little has been found. Currently the Philippines produces less than 5% of its consumption. As a result of successful substitution of other energy sources, imported oil supplied only 50% of domestic energy needs in 1985. This increased to 63% in 1987 but this increase has been a largely attributed to a drought reducing hydro-electric power.

The NEDA priorities in the energy field were indicated to be to complete all existing projects and to determine and develop the least cost domestic sources of energy. These include coal, geothermal energy and bio-mass. As part of the effort to develop energy supplies outside of the Manila area, it is planned to develop two geothermal fields in the Visayas region, namely the Palinponon field on Negros Oriental and the Tongona field in Leyte. The former is planned to be eventually connected to Cebu City by transmission line.

NEDA indicated that there is currently a short and medium term shortage of electrical generating capacity in Luzon as a result of the cancelling of the Bataan Nuclear Power Plant. To respond to the drought-induced shortage of hydro-power in Mindanao, the National Power Corporation (NPC) is purchasing barge mounted gas turbine driven generating sets to place there. These can be later moved to Luzon or another location to meet peak power demands. This is a relatively inefficient method of generating electricity consuming oil. By contrast, existing generating capacity can be used more efficiently by power factor correction. One of the TTEM technologies and two of three Demonstration Loan Fund (DLF) projects currently in the final stages of negotiation are for power factor correction. There is little inducement for industry to correct its power factors unless there is a two-part electricity tariff. It is reported that such a tariff is applied only in Luzon.

Energy conservation is still a NEDA priority and the TTEM project is still appropriate in the context of national priorities.

OEA/Conservation Division Responsibilities

The TTEM project is part of the Conservation Division of the OEA. The OEA, which reports to the Office of the President, is responsible for energy policy.

The Conservation Division runs a number of overlapping energy conservation projects sponsored by different international and foreign donors. These are listed on Table 2-1. In order to better understand their relationship to the TTEM project, the other energy conservation projects are briefly described below.

US/ASEAN Project

This is a project whose function was described as a USAID funded project with the Berkeley-Livermore Laboratories as contractor. Its purpose is to develop and coordinate building energy conservation codes in the ASEAN countries. In addition it has energy audit function. OEA declined to allow the evaluation team to review the files and determine its precise scope of work. The USAID Mission in the Philippines indicated that they did not have any documentation on the project and it is presumably funded directly out of Washington. There are no expatriates currently working in the Philippines on the project.

RUE/GTZ Project

The Rational Use of Energy (RUE) Project is funded by German aid fund (GTZ). Its focus is energy conservation in small and medium-sized industries. It commenced in March 1987 and is scheduled to terminate at the end of 1990. Its approach is geared towards relatively simple technology which does not require a high level of technical expertise to comprehend and implement. Its approach might be termed appropriate technology in the

TABLE 1

ENERGY MANAGEMENT/CONSERVATION PROJECTS UNDER OEA

Name of Project	Sponsor	Contractor	Period of Implem.	Building	Indust. Energy	Energy Energy	Tech. Audit	Info. Asst.	Training Diss.	Loan Fund
TTEM	USAID	RMA	6/85-5/90	Yes	Yes	Yes	Yes	Yes	Yes	Yes
RUE	GTZ	GTZ	3/87-12/90	No	Yes	Yes	Yes	No	No	
US/ASEAN	USAID?	Berkeley/ Livermore Laboratory	?	Yes	No	Yes	?	Yes	?	No
		UNDP/ UNIDO	5/83-3/88	Yes	Yes	Yes	No	Yes	Yes	No
SAL TAC II	World Bank	PNOC	6/88-	No	Yes	Yes	?	Yes	?	Possible

true sense of the term. The RUE does not organize seminars and meetings but it does participate in such activities organized by others.

It has equipped an "energy bus" with measuring instruments and training aids which travels around the country providing technical assistance, including energy audits, and energy conservation training at factories. It is currently in Mindanao. Two more similar buses are planned. In addition to the educational focus of the energy bus the RUE provides in-depth technical assistance to a limited number of plants, assisting in the design and implementation of energy conservation measures over an extended period of time.

The RUE organizational concept is fundamentally different to that of the TEM Project. GIZ is an independent not-for-profit organization and not a government agency. The Project Director is a long-term GIZ employee. It has two long-term expatriate engineers and one expatriate policy analyst attached to it. It has hired six local staff, and ten OEA permanent (civil service) staff are attached to it. Unlike TEM, the GIZ Project Director has the apparent authority to hire his local staff directly. Salaries are not discussed with OEA. He has wide authority over the use of the GIZ project funds.

The combination of a dynamic and capable Project Director with a freedom of action not enjoyed by either the Filipino or the RMA TEM staff has led to a comparatively active and successful project and caused some comparisons to be made which are disparaging to TEM and RMA.

The USAID approach is to institutionalize the TEM function which requires a far greater host country participation. By its very nature this diffuses the lines of authority between the U.S. Contractor and the local hire Senior Staff. It has yet to be demonstrated whether, once the current RUE Project Director is removed and not replaced by someone of equal competence, the project or its function within OEA will be able to sustain themselves.

SAL TAC II/World Bank Project

The SAL TAC II commenced recently under the direction of Mr. Benjamin Lim, the former Chief of the OEA Conservation Division of OEA. Mr. Lim is a Philippine National Oil Corporation (PNOC) employee who had been seconded to OEA. As a result of a recent government directive, all PNOC employees seconded to OEA were given the choice of transferring to the civil service or returning to the PNOC. Because of the higher salary scales at PNOC, all employees returned to PNOC, and shortly thereafter the World Bank funded the SAL TAC II. The project is located at the PNOC Engineering Research and Design Center (ERDC) in Quezon City, that is, approximately 15 kilometers from the OEA office.

The SAL TAC II Project is to develop specific energy conservation technologies: combustion control, coal conversion and waste fuel utilization, waste heat recovery and cogeneration in eleven industry sectors in three phases, namely:

Phase I

Cement and mining
Steel and metal
Food and coconut
Textile

Phase II

Chemicals and Rubber
Pulp and paper
Sugar
Glass and ceramics

Phase III

Power generation
Commercial buildings
Transport

Its primary focus is identifying and overcoming barriers to energy conservation. It has a total local hire staff of twenty with four energy audit teams of three people. Three people are devoted to organizing workshops and training sessions, and five people are devoted to policy analysis. It plans to use the RUE and TTEM Projects for any expatriate assistance it needs.

UNDP/UNIDO Project

This project is in two phases. The first phase, under the direction of Mr. P.R. Srinivasan, lasted from May 1983 to March 1988. It provided institutional consultancy and training in energy management for 15 engineers, most of whom are still with OEA. It provided both theoretical and practical training for 18 months and then undertook preliminary and detailed energy audits. In addition it established a fuels and appliance testing laboratory at ERDC. This laboratory has capabilities for testing fuels and water and for testing energy conservation in some domestic appliances. It is currently functioning as part of the Conservation Division but it is due to receive Division status within OEA soon. The project also set up an energy conservation information center at OEA together with a computer. There were one resident consultant and two long term expatriate consultants and some short term consultants in the field of cogeneration.

Phase II of the project, which is reported to have been authorized but has not yet commenced, is to increase the capacity of OEA in undertaking detailed energy audits and increase the capacity of the laboratory to calibrate instruments and test refrigerators, freezers, lamps and bulbs.

Coordination of Energy Conservation Projects

There is considerable informal cooperation between the staffs of the different projects, including TTEM, with the apparent blessing of OEA. As mentioned above, the SAL TAC II Project is looking to TTEM and RUE for expatriate support. The TTEM Resident Consultant and RUE Project Director meet regularly to compare experiences and discuss solutions to problems. The TTEM staff consulted with the RUE staff to obtain the names and addresses of potential firms to visit in Cebu. The RUE Project uses the services of the UNDP/UNIDO Project laboratory to test oil samples.

There appears to be no formal mechanism within OEA to coordinate these projects. No formal meetings are held between staff of the different projects together with OEA. There are no central data files of audit reports and site visits, or any common format for reporting. There is a separate library of books and materials collected by the UNDP/UNIDO Project and the TTEM Project. Each project undertakes separate policy analysis without realizing the work done by the other projects. There are reports that the same firms are continually visited by different projects to undertake the same type of audit.

There seems to be an informal concept that each project has a complementary role. The RUE Project has the major technical assistance role; the SAL TAC II project is concerned with policy development. The US/ASEAN project is concerned with developing building codes. The TTEM Project is the financing arm for energy conservation. There is, however, no written definition of such complementary roles and they do not appear to reflect the objectives of each project when it was set up. There is no apparent attempt to obtain the agreement of the different project sponsors to such a concept. For example, would USAID be willing or able to drop the buy American or Philippine requirement of the DLF in return for GTZ undertaking all technical assistance work?

TTEM Project

The TTEM Project occupies one wing of the fourth floor of the OEA Headquarters located in FNOC building in Fort Bonifacio, a military encampment on the outskirts of Metro-Manila. Entry to the encampment is controlled and on occasion prevented. Taxi drivers have to surrender their driving license on entry and often refuse to take passengers there. It is serviced by "jeepsneys" but otherwise if one releases one's taxi, there is no means of exit except by obtaining a ride with someone having a car or by walking. This is not an ideal location for a project whose objective is to market and encourage participation.

The TTEM Project staff consists of a Project Director, three senior staff positions (two currently occupied), a long term Project Consultant and short term consultants provided by the U.S. Contractor RMA, a number of OEA staff seconded to the project and a number of staff hired by OEA for the project. The Project Director and the senior staff are funded by USAID but selected by OEA with advice from the Resident Consultant. Senior staff

salaries are set at a "private industry" rate which is several times the Philippine civil service rate for an equivalent position. As contract employees they get no benefits except vacation time and they do not receive the normal security of a civil service position. The concept is that it is necessary to pay such high rates to contract personnel to attract people of high caliber in order to give the TTEM project leadership and direction. The Resident Consultant and short term consultants are expatriates paid at U.S. rates plus overseas allowances. All OEA staff are paid by the GOP at civil service rates but direct hires are not given job security. They are essentially at the bottom of the pile. This temporary civil servant class includes a key position in a project directed to disseminating information, the Information Officer. One information officer has left for a much better paying job in the private sector. Her former assistant is currently filling her role without earning the title. She is a young woman with a degree in mass communications who was previously employed as a secretary because she could not find a position in her own field. She took at the opportunity of gaining experience with TTEM. Undoubtedly if she can fulfill the expectations of the project she will also seek a job in the private sector.

The TTEM Project is overseen by a Project Steering Committee composed of the representatives of nine organizations which meet two or three times a year. The Steering Committee is chaired by the Executive Director of OEA. The Project Director reports to the Chief of the Conservation Division, located in the same building, with the Resident Consultant acting as an advisor. This structure, in which a private sector oriented person reports on a day-to-day basis to a civil servant, is not conducive to good management. Either an individual will adopt a civil service attitude in order to fit into this structure, which will largely negate his ability to perform in the function for which he is paid a high salary, or friction will develop and the relationship will deteriorate to the point that it cannot function effectively. For TTEM to function effectively, we suggest that the Project Director should be removed from day-to-day OEA control. He should have the major responsibility for the selection of the new Project Consultant (see Section 14, Items 3 and 4); the selection and programming of short term consultants, both expatriate and local; the selection of TTEM staff; and the promotion of TTEM activities within the policy directives of the OEA and the limits created by the USAID/GOP loan and grant agreement including the preparation of TTEM publications, meetings, style of correspondence and other promotional activities. By the same token, the Project Director should be made accountable for the performance of the TTEM Project.

An efficient mechanism needs to be set up to determine policy objectives and to ensure coordination of the TTEM Project with the other activities of OEA, and the performance of OEA should be subject to regular OEA review. This also suggests the advisability of moving the TTEM project out of the OEA building while a formal reporting mechanism is set up ensuring that the Conservation Division and other complementary OEA activities are kept informed of TTEM activities and vice versa. This would have the additional benefit of freeing the Head of the Conservation Division and her staff to concentrate on the formulation of policy, the setting of priorities and the overall directing of the projects under her control.

Project Planning, Organization and Direction

The TIEM project's objective is to demonstrate increased energy efficiency in the business sectors of the Philippine economy that are heavily dependent on fossil fuels and electricity. The project was assigned to the Office of Energy Affairs in the new government under the direction of its Executive Director. The Executive Director delegated day-to-day management of the Program to the Chief of Conservation Division. She oversees a staff of technical and support specialists who are government employees and is responsible for directing the various energy conservation projects including the TIEM Project under its Project Director and two senior staff who are paid directly by USAID. The TIEM Project is advised by a full-time Project Consultant who is contracted through a U.S. Consulting firm, RMA, and funded by USAID.

Although the project has been approved and funded since 1985, because of the change in the government and lengthy transition period of the new government, as previously discussed, the TIEM project did not effectively become operational until late 1987. In fact, the TIEM Steering Committee composed of various government and private leaders did not officially approve the DLF qualification criteria until March 1988. Since that time the TIEM organization has been responsible for contacting target businesses in the Philippines that could benefit from energy conservation measures, to make them aware of the TIEM assistance program. In the summer of 1988 the original Project Director left the program. A new Project Director was promoted from within in October 1988. The vacancy left by the promotion still exists.

During 1988, up until a short time before this evaluation, approximately 90 companies had been contacted by the TIEM staff. Of the ninety companies about one third had energy conservation project potential. Of these about one half were studying projects with energy conservation potential and the other half were proceeding with projects that would be internally funded. The TIEM staff identified seven projects suitable for evaluation as a TIEM sub-project, of which three received TIEM staff approval and are now in the final stages of being processed with TIEM accredited banks for the loans of approximately ₱5.1 million (about 10% of the funds available under the original USAID grant). Projects reported to be in the pipeline by the TIEM staff could further obligate approximately ₱20 million of the loan fund which would require an additional 40% of the available funding. During this same period, USAID has spent \$1.0683 million for TIEM staff, the Resident Consultant, for 9 visits by short term technical consultants from the U.S., equipment and the first installment of the DLF.

At this point, the project is making some progress but the results to date have not been what the TIEM management and the Steering Committee expected interviews. Interviews with representatives of both groups established that they had expected more progress by this time in loans closed and the installation of demonstration projects.

Some of the observations that relate to the planning, organization and direction of the project that were reported in the course of our interviews, are summarized below.

Planning

Considerable time and effort appeared to go into the original evaluation and planning for this project. TIEM received initial direction from the GOP and the Project Consultant in the summer of 1987. This direction did establish goals for hiring staff and establishing loan procedures but it did not seem to clearly establish priorities and goals with milestones for the establishment of sub-projects that could be used by the project management and the Steering Committee and USAID to measure the rate of accomplishment and to recommend changes as needed. This lack of planning and internal review appears to have allowed the project to drift initially without a clear sense of direction.

Planning has been more actively pursued since the summer of 1988, as shown by the development of the marketing program in August 1988. As a result, the TIEM team seem to have accomplished more tangible progress in the last few months than it had in the previous year. Nevertheless, tangible accomplishments of the program experienced by the companies that have achieved measurable energy savings as the direct result of TIEM technical assistance or who plan to benefit from a TIEM loan to accomplish something they would not have done otherwise, are not apparent.

The project needs to have its planning carefully reviewed and revised under the guidance of OEA, USAID and the Steering Committee. Targets must be established for achieving measurable results in each quarter. Each professional member of the TIEM staff should be assigned a responsibility for performance that supports the target. In this way it will be easier to measure the progress being made, to determine where the problem areas are that need attention and to see that overall goals are met.

Organization

The organization of the TIEM staff does in itself seem to present a significant hindrance to the project performance. The tiered salary structure is not conducive to harmonious team work. Also, it appears that the organization makeup is heavily weighted to technical personnel. Overall, it appears that the assigned talent within TIEM does not represent the correct mixture of talent required to carryout the TIEM mission. For instance, to place the key position of Information Officer in the least rewarded salary group appears not reflect the real priorities of the TIEM Project.

The anomalous position of the long-term Project Consultant is discussed in greater detail in Section 11. We do express concern at the position of the Project senior staff and particularly that of the Project Director. While they are paid relatively high salaries to attract dynamic individuals, they do not appear to be offered any career path. Clearly, once the Project is

no longer funded by USAID, their current positions and salaries will cease. This is due to happen in 1990, a relatively short time to build up an organization which could then sustain itself as say a consulting organization. Quite clearly, while the project is overshadowed by a rapidly approaching termination date, these individuals will become increasingly concerned with their future careers rather than the development of the Project.

Our evaluation indicated that TIEM needed to have a stronger orientation to planning, information dissemination, marketing and finance in order to achieve its objectives. Without more of these strengths, the talent of the technical staff is not being given an opportunity to work where it can produce the best results.

Direction

The TIEM project is under the supervision of the Executive Director of OEA. He has delegated day-to-day responsibility to the Head of the Conservation Division who has the responsibility to oversee the TIEM staff and their results. In addition, USAID, as the source of the grant funds, has assigned a full-time Project Consultant and a member of the USAID staff is responsible for overseeing the project's progress. In addition, a nine-member Steering Committee was established at the outset to act as a Board of Directors in seeing that the TIEM project accomplished what was intended by USAID and endorsed by the GOP as a worthwhile project.

Unfortunately, this variety of checks and balances in leadership and direction have not functioned as intended and therefore have allowed the project to drift.

The Project has lacked a clear sense of direction and consistent management since the beginning. Following the changes in the GOP, the TIEM project was assigned to the newly formed OEA in late 1986. When the RMA TIEM Resident Consultant arrived in February 1987 there was no TIEM Project Director, so the consultant worked with the Head of the Conservation Division who was responsible for administering a number of energy conservation assistance projects. A TIEM Project Director was appointed in December 1987 after a long search. He resigned in June 1988 and another search was initiated for a new Director. In October 1988, it was decided to elevate a member of the TIEM staff to be Project Director. During this period there were also a number of changes in the USAID Manila Mission organization and the officer responsible for the project was re-assigned to another post.

The Executive Director of OEA in mid-1988 recognized that the changes and vacancies were creating problems for TIEM, and therefore he became more actively involved in the project. It appears that his efforts and those of the new Project Director have given the TIEM project new energy and initiative. Their efforts, along with those of the TIEM staff, have generated considerable activity and progress in the past few months.

Further management changes will probably have to be made to sustain this progress since the Executive Director cannot afford to remain so actively involved. The effort of the past few months, however, has shown that the TEM/DLF project can ultimately achieve the originally intended objectives if the efforts of the TEM staff are more positively directed and if the organization is revised to assign staff responsibility for the tasks that will be required to carry out the successful implementation of the project.

SECTION 4

THE ROLE OF THE GOVERNMENT OF THE PHILIPPINES

This section concentrates on those areas where the actions and support of the GOP impacts on the TEM Project.

Conditions Precedent

The loan agreement set a number of conditions before USAID could make a disbursement of the grant to the GOP. The most significant conditions precedent (CPs) are:

- o The selection of a U.S. technical contractor.
- o Assignment of staff to the project by the Philippines Ministry of Energy.
- o The establishment of a project Steering Committee.
- o A memorandum of understanding be executed between the Philippine Chamber of Commerce and Industry, the Energy Management Association of the Philippines, the Banker's Association of the Philippines and the Bureau of Energy Utilization (BEU) of the Ministry of Energy detailing the roles and responsibilities of each in the implementation of the project.
- o A Master Agreement has been executed between the Central Bank (CB) and BEU detailing roles and responsibilities of each with respect to the administration of the Project's Demonstration Loan Component.
- o The preparation of a policy manual approved by USAID relative to the Demonstration Loan Fund.

All CPs were met on December 11, 1987.

Commitment of Resources

The implementation of the project requires a continued commitment of resources and funding by the GOP as defined in Section 3.2 of the Loan and Grant Agreement.

- "(a) The Cooperating country agrees to provide or cause to be provided for the Project all funds, in addition to the Assistance, and all other resources required to carry out the Project effectively and in a timely manner.
- "(b) The resources provided by the Cooperating Country for the Project will be not less than the equivalent of \$732,000, including costs borne on an "in-kind" basis. In addition, expenditures of A.I.D. Funds will be dependent of the contributions of the Cooperating

Country and the participating private firms equivalent to at least 25% of the total Project costs."

The GOP has made adequate space available to the TTEM project and has funded all the required OEA personnel assigned to the project. The Project Consultant stated that the GOP has lived up to its commitments and there have been no delays due to the GOP not committing adequate resources in accordance with its commitments. By contrast, the RUE Project reports that its activities outside the Manila are severely curtailed in the period December through March because of the GOP funding cycle which prevents the payment of transport costs and per diems for OEA employees. To date the TTEM Project has not carried out any activities outside of Manila between December and March. In their comments on the Draft Report, RMA indicates that is a goal of the TTEM Project to cover the country (see Appendix F, Comment 4). This potential problem, therefore, needs to be investigated and resolved before the Project proceeds further.

There is no indication that any private firms have committed any resources to the Project beyond making their staff available during site visits and sending personnel to attend seminars and workshops.

Other Support

The relationship of the TTEM Project to other energy conservation projects under the control of OEA is described in Section 3. It is noted there that the OEA does not coordinate these projects to ensure that they operate in a complementary manner and do not duplicate each other's activities, that the information gathered by each project is reported in a common format, centralized and disseminated, and, most important, that the activities of each project be directed to most effectively meet the needs of energy conservation and reflect the current priorities of the GOP.

As a specific example of this last statement, NEDA has identified an upcoming shortage of electrical power. One of the TTEM technologies is power factor correction which, if widely applied, would improve the efficiency of generation plants relieving the need to purchase additional low efficiency and oil consuming capacity on an emergency basis. This is a simple technology to apply and by chance two of the three initial DLF projects involve power factor correction. To apply power factor correction in an effective way requires planning and coordination between OEA, NPC, the National Electrification Administration (NEA), NEDA and the TTEM Project and includes questions such as the application of a two-part electricity tariff. It is suggested that the determination of the need and establishing the feasibility of such a setting of the priorities of TTEM activities is the type of support and direction needed by the Project from the GOP if it is to be effective.

It is therefore strongly recommended that the GOP and its energy planning arm, the OEA, concentrate on setting up such a coordination mechanism.

SECTION 5

MEETING THE NEEDS OF INDUSTRIAL AND COMMERCIAL USERS

Reflecting the division of the project into two components of technical assistance and technology demonstration, the subject of meeting the needs of commercial and industrial users is divided into two sections.

Technical Assistance

As discussed in Section 3, the TTEM Project is one of many projects in the energy conservation field. The discussion of this question has been divided into two parts: do industrial and commercial energy users need or want energy conservation and do they specifically need and want the technical assistance offered by the TTEM project?

With regard to the first point there are mixed signals. Energy conservation is driven by an ethic and not itself a technology. The motivation to adopt the ethic can be public spirit or self-interest to reduce costs. It is safe to say that most Philippine industrialists accept the need for energy conservation as a matter of principle. It is less safe to say that they include it among their priorities for action in their own plants. The Energy Management Association of the Philippines (ENMAP) has been established. This currently has 69 corporate members and 800 individual members showing a considerable interest in the subject. In addition ENMAP has 12 Industry Sectorial Committees with one or more representatives from that industry. ENMAP has an annual conference which is preceded by a five-day Energy Management Training Course. Seventy-five participants from industry have registered for the course to commence on December 1, 1988. Reviewing the list of participants, it is obvious that the majority come from the multi-nationals and the largest Philippine owned firms. There are no representatives from a recognizably small or medium sized firm. The SAL TAC II Project recently is holding a workshop for the food industry. Only nine representatives of industry participated in the first part of the workshop but more are expected in the second part, to be held in December, 1988. Discussions with TTEM staff and with staff from other projects based on their site visits would tend to confirm that the major interest in energy conservation comes from the multinational and very largest Philippine owned firms. There is little interest demonstrated in energy conservation by the majority of firms.

The large firms have considerable in-house technical capabilities and can design their energy conservation measures independently of outside technical assistance. They do, however, express interest in any technical assistance which is capable of identifying additional measures and they also appreciate technical assistance from specialists in highly technical fields such as control systems. This assistance may not always be relevant to the goal of promoting energy conservation.

Instilling energy conservation techniques in other firms is much more difficult and at times frustrating. It is difficult to demonstrate that the

TTEM project is responding to an expressed need across the spectrum of Philippine industry.

Insofar as the TTEM project has produced at least one short term consultant with expertise in a field of particular interest in the most advanced sector of Philippine industry, i.e. control systems, it has met a demonstrable need. However, the interest expressed has not been limited to energy conservation projects, and this sector of industry appears to have adequate access to such expertise when required without resort to TTEM.

Technology Demonstration - DLF Program

As discussed in Section 7, the DLF program has not yet been sufficiently developed to be able to determine the interest of the private sector. The areas of concern are the impact of the buy American or Philippine goods and services requirement and the USAID Manila Mission requirements for good business practice. Until a loan has been consummated and the equipment has been installed and demonstrated, it will not be possible to evaluate whether the program achieves its purpose of promoting particular technologies. We do, however, express the concern that under pressure to demonstrate results the TTEM staff do not plan their program with a sufficient eye on the replication of their projects.

Though mechanisms are in place for publicizing the results of successful DLF projects, e.g. the TTEM Channel, seminars, workshops and conferences, no plan has been drawn up on how these projects will be marketed throughout the Philippine economy.

SECTION 6

APPROPRIATENESS OF SELECTED TECHNOLOGIES

This question is being approached from two directions. First, the specific question as to whether the technologies chosen for emphasis in the PP and included in the project are appropriate is addressed. Then, in view of the findings of the evaluation team, the question as to whether it would not be better to have more flexible approach to technology so as to be able to better respond to changing priorities of the Philippine economy is explored.

Review of Selected Technologies

The following technologies were selected in the PP as the primary technologies to be applied in the project:

- Combustion monitoring and control systems
- Flue gas heat recovery systems
- Increased use of insulation in industrial processes
- Power factor control
- System distribution maintenance procedures
- Outside air compensation for chiller systems
- Building energy management systems
- Increased roof insulation on existing buildings

The PP makes reference to additional technologies to be considered after the initial phase, namely:

- chilling
 - Commercial building cogeneration with absorption
 - Small industrial cogeneration (Less than 1 MW)
 - Vapor recompression in the processed milk industry
 - Cold extrusion in the tire industry
 - Electrical and chemical heat pumps in the vegetable and processing industry
 - Task lighting and daylighting
 - High-efficiency electric motors
 - Advanced heat exchangers (e.g. heat wheels, heat pipes)
 - Automatic electricity demand limiters

Combustion Monitoring and Control Systems

There are reported to be approximately 6,300 boilers in the Philippines. With the exception of those of the NPC and U.S. military bases, all are reported to be relatively small (oral statement of an equipment vendor). Boiler operation and efficiency is addressed by at least two of the other energy conservation projects, RUE and SAL TAC II. It was probably also addressed by the UNDP/UNIDO Project. The RUE Project, which has the greatest experience in visiting plants throughout the Philippines, reports that boiler operators by and large do not maintain the minimum housekeeping standards necessary to improve boiler efficiency, such as closing boiler

doors. It is reported that boilers and boiler operators have to be licensed but that the regulations are not enforced and operators have little training or education. The two plants visited by an evaluator had low safety and maintenance standards. At least one major U.S. manufacturer of boiler controls has an extensive sales and distribution network in the Philippines. Therefore, it is felt that in the field of combustion monitoring and control systems, the TIEM Project duplicates the activities of other projects and vendors in the area of technical assistance. The Philippine market in combustion control systems is limited to a few companies with adequate access to the technology and it is unlikely that this technology will be widely diffused in the near future. Any general improvement in boiler operation can come about only as part of a general improvement in operation and maintenance procedures throughout Philippine industry. The DLF could be useful in promoting such systems in the limited market that exists but the relatively low cost of such systems (Pesos 160,000 to 350,000) discourages potential users from applying in view of the loan processing requirements.

Flue Gas Heat Recovery Systems

This technology is again also covered by the RUE and SAL TAC II projects. The RUE project has successfully installed such a system on a diesel engine, exhaust saving about 4 tons of wood a day but it must be noted that part of the success is due to poor operation and maintenance on the diesel engine resulting in its exhaust temperature being about 180°F above normal. This technology could be applied successfully in a DLF project. In their comments on the draft report (see Appendix F, Comment 21), RMA have indicated that heat recovery from flue gases is an Energy Management Association of the Philippines priority and offers significant potential for energy conservation.

Increased Use of Insulation in Industrial Processes

This technology does appear to be covered by the RUE Project, at least in small and medium sized industries, and there are undoubtedly considerable opportunities for energy savings if the technology can be marketed successfully. Its applicability to the DLF program has yet to be determined.

Power Factor Control Equipment

Power factor correction has limited application as an energy conservation technology. Its main application is to reduce capital costs and improve the output of electrical utility generating and transmission equipment. However, as described previously, it appears to be of immediate concern to the Philippine economy in view of the forecast electrical power shortages in Luzon following the mothballing of the Bataan Nuclear Power Station and elsewhere throughout the country. A program coordinated with the NPC, the National Electrification Administration (NEA) and power distributors such as MERALCO, as previously suggested, could possibly be extremely fruitful if undertaken on a crash basis.

Steam Distribution Maintenance Procedures

Maintenance appears to be a major concern in industry in the Philippines. It is doubtful if any impact can be made on one item of maintenance outside of a general improvement in maintenance procedures. Maintenance in industry is the subject of ongoing work at the National Engineering Center of the University of the Philippines by the former Resident Consultant for the completed UNDP/UNIDO project. Only the multi-national companies and the most progressive Philippine owned industries would appear to have the capabilities of absorbing this technology, and they probably have adequate access to it without the assistance of the TIEM Project through ENMAP, SAL TAC II and their own resources. In its comments on the draft report (see Appendix F, Comment 23), RMA has pointed out that this technology goes beyond pure maintenance and includes the design of steam distribution systems. Insofar as an appropriate demonstration project could be funded under the DLF program for improving a steam distribution system in an industry with the capability to efficiently apply maintenance procedures and to demonstrate the energy savings resulting therefrom, it could be a valuable long term demonstration not only of energy conservation but of good maintenance practices in addition.

Commercial Building Technologies

The energy technologies related to commercial buildings, outside air temperature compensation for chillers, building energy management systems, and increased roof insulation, have limited application to most areas of the country, as such buildings are largely concentrated in Manila. It is not clear to what extent the TIEM technologies overlap those addressed by the US/ASEAN Project. Commercial buildings are also covered by SAL TAC II project and were probably covered by UNDP/UNIDO. One of first three DLF projects being processed is in the area of commercial building energy conservation but not specifically in one of the technologies listed in the PP. In this case, the engineering design work had been done by an outside AE firm, and the TIEM project does not appear to have made any significant technical contribution. The TIEM Project has not determined how much energy could be saved by the application of these technologies. Therefore, specific comments on the technologies are reserved. However, commercial buildings are significant consumers of electricity, particularly in the Manila area, and a reduction in demand is not only important to improve energy conservation but also to reduce electricity demand. This sector could again be the focus of a coordinated effort to promote energy savings as discussed below.

Identified Secondary Technologies

The secondary technologies identified in the PP appear to be highly sophisticated and of limited application in the Philippines at present. No effort has been made to determine to what extent they have been successfully applied in the U.S. and other industrialized countries. They do not appear to be suitable for dissemination and are therefore inappropriate for the TTEM project.

Technology Selection Process

As previously stated, energy conservation is driven by an ethic and is not itself a technology. Many technologies and procedures have been improved or spawned in order to achieve energy conservation. The application of many of these technologies and procedures has been well established in the U.S. and other industrialized countries, and the most common ones are included in the general categorization of energy conservation and have become established as synonymous with the ethic itself. A somewhat static approach to technology selection based on U.S. experience appears to be inappropriate to the needs of the Philippines. A more dynamic approach of identifying technologies applicable to changing conditions in the Philippines and responding to the immediate priorities of the country appear far more likely to be fruitful instead of the stagnant approach which is implicit in locking into specific technologies.

The alternative approach being developed by the TTEM Project of undertaking visits to industries, reviewing their problems and then trying to solve them does not appear appropriate to the goal of disseminating energy conservation throughout Philippine industry. It will inevitably lead to the project undertaking detail design work for individual industries for technologies which are not replicable elsewhere. This will, effectively, result in a TTEM funded subsidy to selected industries in the modern sector with little overall energy conservation potential. The "appropriate technology" approach of the RUE Project can be effective in teaching energy conservation principles in the less sophisticated sector of Philippine industry, but it is very labor intensive and requires particular skills which are hard to find. Its success in disseminating energy conservation has yet to be established.

The more appropriate approach appears to be for the GOP to identify pressing needs (e.g. to conserve electricity) and for the TTEM Project to design a plan to make a significant contribution to energy conservation in that sector. Then, as soon as the TTEM plan is approved, the GOP should set up the coordination mechanism to implement it. This, however, requires an ability to communicate, coordinate and respond to problems on a rapid basis which has currently not been demonstrated by either the GOP, the TTEM Project or RMA. A possible organization to achieve this goal is described in Section 3.

SECTION 7

DEMONSTRATION LOAN FUND

Financial Soundness

The revolving Demonstration Loan Fund (DLF), as originally established in the Project Agreement of May 31, 1988, consisted of a USAID loan of \$2,567,000. It was modified on August 30, 1986 to be a grant of \$2,660,000 to allow the funds loaned by Philippine commercial banks to be repayable in Philippine pesos without foreign exchange risk.

The DLF was to be funded by USAID through the Philippine Central Bank (CB) in takedown stages in stages based on the loan funding needs of the project. Requests to the CB for funds under the DLF were to come from TTEM accredited commercial banks, prior to Closing on a loan for a qualified TTEM energy conservation sub-project.

At the present time, there are five Philippine banks accredited to disburse DLF funds:

- 1) Rizal Commercial Banking Corporation
- 2) Security Bank and Trust Company
- 3) Solidbank Corporation
- 4) Private Development Corporation of the Philippines
- 5) Planters Development Bank

Three additional Philippine banks are reported to be seeking accreditation:

- 1) City Trust Banking Corporation
- 2) China Banking Corporation
- 3) Prudential Banking Corporation

USAID was requested to transfer ₱9.3 million of DLF obligated grant funds to the CB in mid-1988 for three approved TTEM sub-projects:

- 1) Philippine Long Distance Telephone Company (PLDT)
- ₱4.2 million
- 2) Benguet Corporation
- ₱520 thousand
- 3) Central Azucarera Don Pedro (CADP)
- ₱380 thousand

As of this report, there have been no requests to the CB from DLF accredited banks to transfer funds for Closing on the above loans. It is expected that the Philippine Long Distance Telephone Company (PLDT) loan application will be ready for Closing in early December. The PLDT loan terms have been approved by the company and the bank. The loan agreement is subject to review by the PLDT legal department before the loan Closing can be scheduled. The TTEM staff indicated they expect the other two approved projects to close before year end. If the three Closings occur as expected, it will result in a disbursement of ₱5.1 million of the ₱9.6

million USAID funds held by CB, or about 10% of the DLF obligated USAID grant funds.

The terms and conditions of the DLF appear to be attractive both to the companies that have applied for loans or those which are considering applying. The basic loan terms are for a five-year fixed rate loan, at an interest rate set in relationship to the Manila Reference Rate (MRR), a weighted average of 180 day deposit interest rates offered by ten Philippine commercial banks plus a 3% premium. The result was an interest rate of 13.4% available in the second quarter of 1988 which increased to 14.1% in the third quarter and is set at 13.9% in the fourth quarter.

These rates compare favorably with five-year fixed term commercial rates available to Philippine companies. The PLDT, which has access to local funds at most favorable rates, reportedly would expect to pay 16-17% for a five-year fixed rate loan. A company below the top 50 but in the top 1000 could expect to pay 18% for the first year of a five-year term with future interest negotiable. If a five-year fixed term loan were available it would reportedly be at 20-22%. A medium sized company with a good local credit standing would ordinarily not be able to borrow funds at fixed rate for five years except through a government sponsored funds such as Social Security System (SSS) loans. If a five-year fixed rate term loan were available to such a company the rate would be between 23-25% for the five-year term.

It was apparent from these discussions is that the DLF loan term and interest rate are attractive. They are marginally attractive to the very large companies with superior financial ratings by a spread of 1-2 points. The relative peso savings to such a large company on a maximum loan of P4.2 million, however, has little aggregate impact on the company finances. What is most ironic about the DLF, is that the terms offered become increasingly attractive to large/medium size companies that rank in the 500 to 1500 size category of Philippine businesses. The term and cost of a DLF loan, both marginal and real, to these companies offers an attractive incentive that enhances the payback potential of an investment. Unfortunately, the smaller companies that did express an early interest in the DLF reportedly lacked an adequate credit standing. The credit-worthy medium and smaller companies, by and large, have not been reached to date because the TTEM marketing had been targeted to larger companies.

Private commercial banking institutions in the Philippines, according to interviews with officers from accredited institutions as well as institutions interested in becoming accredited, have expressed a receptive attitude to the DLF project. They seem to represent a sufficient number of institutions (in some cases with extensive branch networks) to capably support the DLF project. They expressed a willingness to actively promote the project to their client companies that might benefit most from the project's advantages. The feeling most often expressed was the need for their loan officers to better understand the key elements of the TTEM/DFL project so they could present it in an understandable way to their clients. They felt they also needed more sales support literature so that a client company could better evaluate the suitability of a TTEM project for their

operation. The literature would make it easier for an interested client to know what steps to take to determine if a planned energy saving project would qualify and with whom to make initial inquiries.

Some of the bankers interviewed expressed concern that the obligated funds, \$2.66 million or approximately P56 million, represented a potential for only 13 loans at the maximum allowable amount of P4.2 million each. The bankers expressed a concern that if they aggressively promoted the DLF available funding might be exhausted before their interested clients could qualify for TTEM approval. The bankers did not wish to take that risk. They would want a client to have an early assurance that funds would be available if an application were submitted and accepted. The banker's concern seemed ironic considering that the DLF project has been available since August 30, 1986 (although the Steering Committee did not approve the interest rate and selection criteria until February 4, 1988), and still no loans have been taken down. It points out, however, that the DLF project does not require the effort of many banks to meet its obligation. Even four banks, if one assumes an average DLF loan of P2.63 million (\$125,000), could only average five DLF loans each.

A key element with accredited banks seems to be the careful selection of a few banks which could most effectively serve the TTEM objectives. This means selecting those banking institutions which, with the support of senior management, would be willing to promote the DLF project to the clients. These would be bankers who feel that the terms and conditions of the DLF would be attractive to their clients and would comfortably fit into its normal lending practices.

It appeared from our review that many banks were contacted to become accredited DLF institutions, without regard to how those institutions might benefit TTEM. The five accredited banks apparently were accepted because they applied and were qualified. They may not, however, have been the five best Philippine banks for promoting the TTEM objectives.

As previously indicated, most of those interviewed felt the DLF merits, if properly promoted, would achieve an acceptable level of demonstration projects intended when the project was planned. Nevertheless, they pointed out a significant number of the potential energy saving projects in the Philippines would not be undertaken with DLF assistance because of the requirement to purchase U.S. and/or Philippine equipment. They expressed an apparently widely held feeling among local managers in large and medium sized businesses that U.S./Philippine energy saving equipment in many cases would be a disadvantage because of the lack of post-sale support and the timely availability of spare parts. Often local Philippine businessmen decide to purchase equipment from Asian or European suppliers because the post-sale support is better and spare parts are available locally or could be shipped in within a few weeks. Many U.S. companies apparently are not in a position to offer a competitive level of post-sale support and spare parts availability in the Philippines. This situation does not apply in all cases. Manufacturers such as Westinghouse appear to provide highly competitive products and service in the Philippines.

Applicability of Technologies for Demonstration Purposes

The DLF sub-projects under consideration or for which loan agreements are being finalized are listed in Table 2. As shown in the table, only three out of nine sub-projects are TTEM technologies as defined in the PP. The linking of the air conditioning systems of two buildings, though not a TTEM technology could be considered appropriate, subject to the conditions discussed below. Other projects, such as the use of oxygen-enriched burner to pre-heat scrap in an electric-arc steel furnace, are highly specialized applications which appear to be divorced from the intent of the PP. The concept of the DLF is clearly to proselytize the use of certain energy conservation technologies with a wide application in the Philippines. It does not seem that it was the intent of the authors of the PP to lock into the specific technologies they listed, as the applicability of these technologies in the Philippines could not be established by the level of study undertaken for the PP, but only through the development of the TTEM Project itself. It appears to the evaluators that the PP did intend to use the DLF to promote technologies with a wide application, but they did not intend to use the DLF to fund highly specialized applications whose relation to conventional concepts of "energy conservation" is difficult to establish.

Two of the sub-projects relate to the use of agricultural wastes as fuels. In themselves, these appear to be good projects to support insofar as the technologies to be used are sound and it can be demonstrated that they can be replicated elsewhere. However, they appear to be outside the scope of the TTEM project and of the OEA Conservation Division. A policy decision needs to be taken and recorded by OEA before proceeding with these projects that the use of agricultural wastes as fuels is an activity to be supported by the Conservation Division and the TTEM Project.

The substitution of a diesel prime mover by electric motors does appear to be appropriate at this time in view the looming electrical power crisis.

As noted, the linking of the of the air conditioning systems of two buildings is not a TTEM technology. Furthermore, it probably only has limited application in the Philippines and therefore it is not easily replicable. However, as mentioned elsewhere, building energy conservation in the Philippines results in savings in electrical power. This, in principle, appears to be worthy of promoting. Unfortunately, the PLDT project will save power during off-peak periods which will not assist the immediate crisis to avoid "brown-outs" and "black-outs" during periods of peak demand. If the PLDT project can be used to demonstrate the value of building energy conservation, and if OEA and the TTEM Project are able to develop a coherent policy to emphasize those energy conservation measures which would have greatest impact on peak electrical power demand, the sub-project would be of value within the context of the TTEM project. Comments on the power factor correction sub-projects have been made elsewhere.

TABLE 7-1

ENERGY CONSERVATION POTENTIAL OF DLF PROJECTS

Company	Description	TTEM Tech- nology?	Simple Payback Period	Project Cost Million Pesos	Notes
PLDT	Linking a/c systems	No	4.7 yrs	6.4	a
Benguet	Power factor correction	Yes	1.07 yrs	1.0	b
CADP	ditto	Yes	1.33 yrs	.5	b
Benguet	Replacement of compressor prime mover	No	1.25 yrs	1.0	c
Polyphosphates	Fan & duct improvements	No	3 yrs	2.0	d
PTC Trading & Dev't Corp.	Ricehull fed power system	No	n.a.	5.0	e
Vacphil Rubber Corp.	Insulation of steam lines	Yes	n.a.	1.5	
Republic Cement	Improvements to pre- heater	No	2.3 yrs	8.0	f
Armco- Marsteel	Oxy-fuel burner	No	n.a.	6.3	g
Matling Ind. & Commercial Corporation	Biogas system	No	4 yrs	6.8	h

n.a. - payback period not available or calculated.

Notes:

- a. The actual project, the linking of the air conditioning systems of two buildings so that the combined system can be operated more efficiently, can probably be replicated only in a limited number of situations. However, this is a building energy conservation measure which reduces electrical power demands. If it is properly demonstrated, it could be used to promote energy conservation and specifically conservation of electrical power in the building sector.
- b. The major benefit of power factor correction is in improving the efficiency of the electrical grid.
- c. Two 150 hp-diesel engines are to be replaced by electric motors. In view of current power shortage, this does appear to be an appropriate TTEM project at this time.
- d. This does not appear to be an appropriate TTEM project.
- e. Fuel substitution. This is not strictly an energy conservation project, but the substitution of the bio-waste of industrial processes is a valuable means to reduce demands for imported oil and other non-renewable energy sources. There appears to be a considerable potential for the use of such wastes in the Philippines.
- f. The potential for replication of this application is limited.
- g. This appears to be a specialized application inappropriate for the TTEM Project.
- h. This involves the production of energy from bio-wastes and appears to be beyond the scope of the TTEM Project. TTEM are proposing to drop this project due to difficulties in finalizing the loan.

SECTION 8

ROLE OF EQUIPMENT MANUFACTURERS AND VENDORS AND CONSULTING ENGINEERS

The TTEM Project does not appear to have made a concerted effort to locate and develop the capabilities of equipment manufacturers and vendors as well as consulting engineers. The concern expressed by the Secretary of State in the PID review that "when the project is implemented BEU will view their role as more operational, (i.e. doing technology demonstrations, energy audits, etc.) instead of developing the capability of the lending institutions or the A and E community to carry out the operational side of the project" (see PP Annex A) is still valid today though the BEU has been transformed into the OEA.

The issue of involving the lending institutions is handled in Section 7. The evaluation team's contacts with vendors did not indicate a close relationship or a complete awareness of the TTEM program. Discussions were arranged with three vendors of U.S. manufactured energy conservation systems. In one case the salesman appeared knowledgeable of the TTEM program, but the principals of the relatively small firm appeared to be only vaguely aware of TTEM. In the other case the vendor appeared to consider that the DLF was inapplicable to him because the lower loan limit is well above the cost of his equipment, whereas there is no official lower loan limit in the DLF loan program. A U.S. manufacturer has sent a representative from their regional office in Singapore to make a presentation to TTEM staff.

Though a request was made to arrange a meeting with a consulting engineer for a DLF project this was not possible. A number of individual consultants were met. Though they supported the TTEM Project in principle it was not clear that they had any involvement in a TTEM sponsored project.

As indicated in Section 7, the DLF program has not yet blossomed and therefore it is not possible to judge the extent to which the AE community will become involved.

In summary, the TTEM Project has involved vendors and consulting engineers to some extent, but no concerted attempt has been made to identify manufacturers, vendors and consulting engineers and involve them.

TTEM staff indicated a concern that they not appear to endorse any particular product or service. This is a valid concern, but techniques for overcoming it have been developed in the U.S. For example, some governmental agencies distribute lists of vendors with a specific statement on the list that the agency does not endorse any product or service on the list. The same agencies may give qualified advice on the selection of particular products or services in an informal setting.

It is an apparent failure of RMA to bring these techniques to the attention of OEA and the TTEM Project and thus to develop a policy which would allow

greater involvement of the private sector while not overstepping the bounds of propriety for a government agency.

SECTION 9

THE IMPACT OF USAID AND GOP POLICIES AND REGULATIONS

This topic is largely covered in other sections, and this section is intended to refer the reader to the sections in which items are discussed.

In Section 7 the requirement of the DLF loan to use American or Philippine products is discussed. In addition, there is a requirement to follow USAID procedures of "good business practice". No loans have been consummated and equipment purchased as of this date, so that no final determination of the evaluators has been made of the impact these provisions. In the three sub-projects currently under in the final stages of being granted, each applicant has agreed to purchase U.S. equipment. A number of people we have spoken to have brought up the issue of the equipment sourcing requirement from two perspectives. The first, as explained in section 7, is that it is unacceptable constraint, as the applicant has significant concerns with U.S. suppliers with regard to the availability and after sales service he seeks. The second is that the DLF is a program to promote U.S. goods and services and that this program is poorly supported by USAID in informing potential users of the program as to the sources of appropriate U.S. equipment. The distinction between the function of USAID and the U.S. Trade Development Program (TDP) is understandably lost in the Philippine private sector. The impacts of the "good business practice" requirements have yet to be dealt with. In view of the different perspectives of procurement of a government agency and a private business, this is likely to cause problems. The TTEM Project staff will have to clearly understand the USAID Mission in Manila requirements and interpret them to their clients.

In Section 11, we refer to the administrative load placed on the RMA Project Consultant. It is our experience that a U.S. based contractor on a USAID funded contract has to act a buffer between many of the administrative requirements of the host government and USAID. This has never been recognized in any PP or service contract of USAID we have read. Where the senior contractor representative carries the burden of these administrative requirements it impinges on his effectiveness. To the extent that he can be relieved of these requirements, his effectiveness may be expected to improve. For this reason we are recommending that the contractor, RMA, be allowed to hire a local administrative assistant.

In Section 3, we deal with the contradictory organization of the project as semi-private sector project located within a government organization. We suggest that this makes the success of the project considerably more difficult to achieve.

SECTION 10

INFORMATION PRESENTATION AND DISSEMINATION

The TTEM Project has conducted, co-sponsored and participated in a number of seminars, workshops and other meetings. It has participated in the production of publications on energy conservation techniques. It publishes a newsletter, the "TTEM Channel" and it has prepared brochures to publicize its activities.

Workshops, Seminars and Meetings

The TTEM Project has conducted the following seminars and workshops:

Waste Heat Recovery, November 1987

Combustion Monitoring and Control, November 1987

TTEM Demonstration Loan Fund Seminar for members of the Bankers Association of the Philippines, March 1988

Building Energy Management Systems, April 1988

The TTEM project co-sponsored the following seminars and workshops:

OEA seminar on Energy Conservation in Current Design, September 1987

ENMAP seminar on Waste Heat Recovery Systems and Applications, February 1988

ENMAP seminar on Financing Energy Conservation Projects, June 1988

Seminar on TTEM Project co-sponsored with the Cebu Chamber of Commerce & Industry in co-operation with the Mandaue Chamber of Commerce & Industry, Cebu City, November 1988

The TTEM Project participated in the following functions:

2nd Metalworking and Woodworking Equipment Show, September 1987

NCRD Conference on Nonconventional Energy Technologies, September 1987

5th Annual ENMAP Convention, December 1987

SPIK (Chemical Industries Association) seminar on the TTEM Project, April 1988

OEA seminar on Industrial Energy Audit, Cebu City, July 1988

SAL TAC II workshop for the Food Industry, November 1988.

The TTEM Project is scheduled to participate in, but not co-sponsor ENMAP's 6th National Energy Convention by the participation of TTEM and RMA staff and the renting of an exhibition booth. The TTEM Project is also providing financial support to the convention.

A list of participants and an analysis of participant evaluations for the seminars on Waste Heat Recovery and Combustion Monitoring and Control were made available by the TTEM staff. There were 36 participants in the Waste Heat Recovery Seminar all but two of whom had a bachelor's degree in a technical subject. Of these, seventeen appeared to come from industry, six from vendor organizations, six from academia, one from an AE firm and four from TTEM. There were 32 participants in the Combustion Monitoring and Control Seminar, most of whom were the same participants as attended the Waste Heat Recovery Seminar. In their evaluations on a scale of 1 (excellent) to 5 (poor), participants scored as follows on average:

	Waste Heat Recovery	Combustion Monitoring & Control
<u>Organization of Lecture Topics</u>		
a. Design and Selection of Topics	1.8	2.0
b. Sufficiency of Content	2.5	2.5
c. Sequencing of Topics	2.4	2.4
d. Clarity of Presentation	2.4	2.4
e. Relevance to your Line of Specialization	1.9	2.0
<u>Conduct of the Course</u>		
a. Course Materials	2.3	2.2
b. Time Alloted for Each Topic	2.7	2.6
c. Training Environment	2.6	2.1
d. Overall Coordination	2.3	2.0
<u>Overall Usefulness of the Course to the Participants</u>		
	1.8	1.9

The course materials largely consisted of copies of the view graphs but did provide valuable material. They were bound and well presented.

One evaluator attended a part of a presentation by the leading speaker for the Combustion Monitoring and Controls Seminar, who was making a second short-term visit during the period of the evaluation. The evaluator was impressed by the high quality and clarity of the presentation, which was above average for similar presentations he has witnessed in the U.S. It appeared to be set at appropriate level for an audience with a technical background. The speaker himself was concerned that he may not have been reaching about one third of his audience.

Based on the review of these seminars and presentation, it is suspected that the TTEM presentations were on average above the quality of course presentations at universities and colleges and most short technical courses given in the U.S.

There appears to be a considerable difficulty in targeting an audience in industry in the Philippines and the use of high cost short term experts may be unproductive. The RUE project uses films commercially produced by the British Ministry of Energy on energy conservation which they feel are appropriate for their purpose. (The evaluators have no comment on the effectiveness of this approach.)

Publications

The evaluators gave a cursory review of the publication "Waste Heat Recovery Systems" which was produced by ENMAP with the support of the TTEM Project. This is the proceedings of their seminar in February 1988. This publication seems to present a number of well presented papers on the subject. The number of local experts in the field raises a concern at the value of bringing expatriate short-term experts in such a field to the Philippines.

The TTEM Project commenced publication of a newsletter, the TTEM Channel, in January 1988. It was supposed to be issued on a bi-monthly basis but only four issues have been published to date (November 1988). It is well presented, and its contents are of comparable quality to similar publications in the U.S. It does assist in promoting TTEM. Its continuance is recommended on a more regular basis.

The TTEM Project has prepared three small brochures to publicize its activities. One is titled "Demonstration Loan Fund Program for Energy Users" and two are both called "Demonstration Loan Fund Program Lending Guidelines". The first brochure describes the range of TTEM Project activities. Of the other two, one is the guidelines for lenders and the other the guidelines for borrowers. These brochures are well presented and informative but their titles are somewhat confusing. It is recommended that they now be updated and clarified based on experience to date.

General Comments

Information dissemination appears to be one the most difficult problems in achieving meaningful energy conservation goals. This difficulty is apparent in three areas: determining the best means of presentation, determining the level of information to be presented for specific target audiences, and the vehicles for reaching them. All the Philippine energy conservation projects are facing problems in this respect. To the extent that the TIEM project can address this problem successfully, it will have set itself apart from the other projects.

It has been disappointing to the evaluators that many of the people they met at interviews set up by TIEM personnel did not appear to have received any of the TIEM material and had very little knowledge of the project.

The TIEM Project currently has one junior Information Officer. It previously had two but, as mentioned in Section 3, the more senior officer left for a higher paying position. Should she prove herself, the current officer is likely to follow suit, as she is at the bottom of the salary structure. It is strongly recommended that this function be given higher status and upgraded and someone with wide experience information dissemination techniques appropriate for the Philippines be brought in.

SECTION 11

THE ROLE OF THE TECHNICAL ASSISTANCE CONTRACTOR

The Technical Assistance Contractor, Resource Management Associates, Inc. (RMA) of Madison, Wisconsin, were awarded their contract in December 1986. The Project Consultant arrived in Manila in February 1987. The evaluators feel that after his presence for nearly two years and after the participation of nine short-term experts, the results of RMA's participation are nebulous. It is not the intention of the evaluators to apportion blame but to try to analyze events with a view establishing pointers to problems and the means to overcome them.

In order to understand the structural problems, the whole project organization must be placed into perspective. The aim of the project is to institutionalize a capacity for undertaking energy conservation projects in the private sector in the Philippines. The role of RMA is to "provide technical and management support to the TEM Project" (RMA Contract). In the view of the PP, the Technical Assistance Contractor is to "provide technical, financial, and administrative expertise through a long-term U.S. consultant stationed in the Philippines and supported by short term U.S. and Filipino consultants." In other words, RMA's role is that of an advisor to the TEM Project which is structured within the OEA and funded by USAID but intended to promote action in the private sector.

Role of the Project Consultant

Effectively, the Project Consultant is intended to work closely with the Project Director selected by OEA with the advice of the Project Consultant. The Project Consultant arrived in February 1987, whereas the Project Director was appointed in December 1987. In the interim, the Project Consultant worked directly with OEA staff under the direction of the Head of the Conservation Division. The first Project Director resigned at the end of June 1988. His replacement was not appointed until the end of October 1988, that is immediately preceding this evaluation. During the period since February 1987 there have been three chiefs of the Conservation Division. The first chief returned to PNOC where he has set up a parallel World Bank funded project (SAL TAC II). The second Head reportedly asked for his own replacement and the current Head was moved up into her current position recently. These conditions are not conducive to the successful development of the Project Consultant role.

The Project Consultant was asked to account for his time and prepared the breakdown presented in Appendix E. This also presents his concepts of his duties and compares them to the duties laid out in the RMA Contract. In this, he sees his role in an even more advisory capacity than that foreseen in the Contract. This is unfortunate. His time breakdown indicates that over 50% of his time is spent on administrative duties. This, again, was not envisioned in the role.

Despite all these structural and administrative difficulties, there has been a certain level of achievement in which the Project Consultant

undoubtedly played a significant role. Many activities were commenced prior to the appointment of senior project staff including the coordinating of six short-term consultant visits, the preparation of the framework for the DLF program, the organizing and presentation of workshops on Heat Recovery Systems and Boiler Monitoring and Control Systems, and participation in several other seminars and workshops and the selection of senior staff. Since the beginning of the year TIEM has built up an organization, commenced publication of the TIEM Channel, organized and participated in several other seminars and workshops, organized 3 short term consultant visits, developed the DLF program, undertaken many technical assistance activities and organized its first seminar outside Manila during a period of turbulent management of the project. A great deal of credit for these activities undoubtedly goes to the Project Consultant.

Short-Term Experts

RMA have sent nine short-term technical experts to the Philippines. One designed the framework for the DLF which has since been implemented. Two gave the seminar/workshops on heat recovery systems and combustion monitoring and control systems. But there is little of value to show for the visits of the others. Two came to set up energy planning data bases and prepared reports. No further action was taken and currently there is no effective tool for planning future activities. During the evaluators' presentation of the draft evaluation report to OEA, the Chief of the Conservation Division complained that RMA had supplied short-term experts with qualifications different to those requested. When he was interviewed, the TIEM Project Director was asked why they had requested the services in an expert in building insulation. He indicated that they had requested an expert in industrial insulation but the expert turned out on arrival in Manila to be an expert in building insulation. In their comments in the draft report, RMA indicate that the individual concerned is professional engineer of 25 years experience and that his participation extended beyond the field of building insulation. His report does indicate that he visited a number of firms and provided counsel on a wide range of energy conservation related subjects. The evaluators do not consider such an unstructured use of short-term experts as a productive use of such a resource. One short-term consultant was present during the evaluation. He obviously had the highest capabilities in his field and showed great dedication to his work. However, even by his own admittance, he was not very successful in his task. There appear to be insurmountable problems in the use of short term consultants. The first is to match the availability of a particular consultant with the needs of TIEM. The second is the administrative problems associated in mobilizing him to a pre-planned schedule. The third is to plan a good program to use his time effectively in his field of specialization. The fourth is that in order to be effective, he needs to develop relationships over a longer period than he is present so as to follow up and implement initial leads.

The RMA contract envisioned the use of Filipino consultants hired locally. There appears to be a pool of talent in most energy conservation technologies, much of it trained in the U.S. This was demonstrated at the ENMAP Waste Heat Recovery Systems seminar. This has not been tapped. Local

consultants would both be less expensive and more effective than U.S. consultants. They could be called upon on a reoccurring and continuous basis without difficulty assuring follow up on TEM activities.

Essentially, the use of U.S. based short-term consultants has been unproductive and should be discontinued except under special circumstances of needing a skill not available in the Philippines and the development of a plan to use his time constructively. A proposal to use a U.S. based consultant should be carefully screened as the skills in virtually every technology of concern to TEM is probably available in the Philippines. Energy management as foreseen in the TEM Project is not a high technology.

Replacement of the Project Consultant

The Project Consultant is due to complete his contract in February 1989, and RMA are proposing to replace him with a more practical engineer. The evaluation team is not convinced that a more practical engineer is appropriate for the project at this stage. Its problems do not seem to be so much technical as administrative, planning and dissemination of information. In order to be effective, the proposed practical engineer must be relieved of the administrative duties which currently take over 50% percent of the Project Consultant's time. Otherwise a good engineer is likely to become extremely frustrated within a short period of time. RMA have not made any proposal how this could be done.

Tools urgently need to be developed to redirect the project into more effective directions. We suggest that RMA be allowed to hire a local administrative assistant to the Project Consultant to undertake as much of the administrative burden off the Project Consultant as possible. This assistant should be selected, paid by and report directly to the Project Consultant. This is a question of analysis. If undertakings such as implementing power factor correction on a systematic basis are to succeed, overall technical planning and administrative skills are recommended. Finally, the most critical problem in getting the TEM Project moving is disseminating information on the project, what it can do and the principles of energy conservation. This information must reach through industry and financial community in the Philippines from the chief executive to shop floor. This is not a practical engineering problem.

The evaluators' recommendations for the qualifications of the successor to the current Project consultant are contained in Section 14, Recommendation 4.

SECTION 12

THE ROLE OF USAID

USAID could assist the TTEM project achieve its goals by taking the following actions:

- o First, it should seek strengthened leadership for the TTEM project. USAID should ask the cooperation of OEA and the Steering Committee to see that the TTEM Project receives motivated and experienced leadership who understands the product, the skills needed to market it effectively and the need to provide the timely follow-up to clients applying for assistance, as well as assistance with the installation of an approved sub-project and the monitoring of the loan administration and sub-project results.
- o Second, USAID should request to review a business plan for the TTEM project for 1989 that will include any proposed organization changes, a detailed program for marketing the TTEM/DLF project and procedures for implementation and post implementation follow-up. The plan should define the energy conservation projects to be given highest priority by the TTEM staff and describe the industries where new business efforts will be concentrated. Finally, the plan should establish milestones that can be reviewed by TTEM management with OEA management, the Steering Committee and the USAID representative at least every quarter to show how actual progress matches the plan and to allow for making any indicated revisions to the plan.
- o Third, USAID should meet with the TTEM Steering Committee and to seek renewed cooperation from the members, especially the private sector organization members, to actively promote the TTEM project intended when TTEM was established. The Steering Committee should be asked to become more involved in the planning, organization and leadership of the TTEM project to assure themselves that any needed changes are made to facilitate the TTEM project success. The Steering Committee should also agree to monitor the progress being made with TTEM project at least every six months and report its findings to The Executive Director of OEA and to the USAID representative.
- o Fourth, USAID could coordinate with the U.S. Embassy Commercial Section, TTEM staff and RMA to assure the availability of a list of U.S. suppliers of qualifying energy saving equipment and their Philippine agents. As pointed out elsewhere, this should be global and refrain from either endorsing or excluding any supplier.

When companies qualify and proceed on TTEM/DLF sub-projects, the TTEM staff will be required to handle more administrative follow-up as the qualified companies proceed with their projects. This will include monitoring of the installation progress, checking out final installations, scheduling inspections of the installations by potential applicants and reviewing reports on the loan payment status. The TTEM staff will have to be

prepared for these additional administrative activities in the coming years and USAID will want to make sure that OEA has assigned responsibility for seeing the follow-up work is carried out under the terms of the original grant.

SECTION 13

CONCLUSIONS

1. To place the TTEM project in perspective, it should be understood that energy conservation is driven by an ethic and not a technology. The critical element in promoting energy conservation is not so much technology as motivation.
2. The TTEM Project structure and organization is not conducive to its success. The tiered salary structure is not conducive to harmonious personnel relationships. The concept of an organization with a private sector outlook structured and located within a government department is somewhat contradictory. The prospects for the project are not promoting morale amongst the key personnel.
3. The TTEM project does not appear to have had any significant impact on implementing the technologies it was desired to promote in the Philippines to date. The only possible exception is power factor correction for which two DLF applications are currently being processed. The TTEM project appears to be searching for energy conservation measures to support, rather than focusing on the pursuit of the technologies it has been mandated to pursue.
4. Sophisticated changes to manufacturing processes to implement energy conservation measures require detailed engineering, specification, proper installation, adequate operator training and good after sales service. While RMA have provided some training to TTEM staff in project management, it needs to be further emphasized.
5. The perspective of technology in the Philippines is different from that of industrialized countries. This difference appears not to have been sufficiently taken into account in the PP. Technologies were selected based on U.S. practice without a study of their appropriateness to local conditions. Difficulties in applying these technologies have contributed to the lack of direction in the implementation of the project. This highlights a need for a more flexible but, nevertheless, structured approach to technology selection.
6. Industrialists in the Philippines share a skepticism with their colleagues in industrialized countries of tampering with a manufacturing process which works and produces a profit. They need confidence in the proponent of any change before they will accept it, as too often such changes have not met expectations. It is easier to generate such confidence in an industrialized country where products have established records and vendors have adequate service support. Greater effort needs to be devoted by the TTEM project to develop such a level of confidence.
7. There are several energy conservation projects under the direction of OEA with some element of overlap, namely:

TTEM Project
US/ASEAN Project
RUE (German aid) Project
SAL TAC II (World Bank) Project
UNDP/UNIDO Project

While each has a different focus and some different functions all have certain common components, in particular energy audit and dissemination of information through the support of seminars and workshops. An effort should be made to coordinate the activities of these projects in order to optimize the benefits to the GOP.

8. Though the original project loan and grant agreement was signed in May 1985 the implementation of the project has been significantly delayed. Each of the following could be considered partial effective start dates:

Arrival of RMA Resident Advisor - February 1987
Initial hiring of senior Filipino project staff -
December 1987
Replacement of first Project Director - October 1988

Reasons for delay appear to include the change of Philippine government in February 1986, the reorganization of the Ministry of Energy into the OEA, delays in meeting the conditions precedent, administrative delays, delays in selecting senior project staff and the need to replace the first Project Director. The TTEM Project was not considered operational until the end of 1987, approximately two and one half years after signing.

9. The DLF appears to provide adequate funds and an attractive incentive to companies interested in taking advantage of the TTEM project. Interviewees suggested that TTEM has not met its objectives because of shortcomings in the presentation and dissemination of TTEM information. It was felt that the TTEM project and the DLF were properly designed to encourage energy conservation in the Philippines. Nevertheless, the companies that could benefit most from energy conservation have undertaken their programs uninfluenced by the TTEM project. Energy conservation for companies less affected by energy costs, is of a lower priority today because energy costs are now so much lower. A widespread feeling was expressed that many businesses in the Philippines could still benefit from the TTEM project if they were made aware of its existence, provisions and benefits.
10. The amount of grant funds, approximately P55 million, is adequate to fund at least 12 demonstration projects at the project maximum of P4.2 million, or more likely 20 to 30 projects since the loan requirements of many sub-projects are likely to be less than the maximum allowable.
11. The maximum five-year term permitted by DLF at a below market interest rate appears to have provided an adequate financial incentive to encourage qualified companies interested in installing energy

conservation equipment, to apply for a DLF loan. Applications for DLF loans thus far have come from some of the largest companies in the Philippines, which tend to benefit the least from a DLF loan, both in terms of spread and total interest cost savings.

12. Three obstacles seem to confront some companies who might otherwise apply for DLF:
 - o First, the cost for a bank to process a DLF loan for a first-time customer would be too costly and time-consuming to appeal to an otherwise qualified applicant. While there were no known cases of this problem occurring to date, it may have deterred some applicants. At the present time, there are five accredited banks for a DLF applicant to choose from, but it is important that the accredited banks, include banks that have as customers medium/large and medium size target companies to minimize the cost and time of processing.
 - o Second, many of the energy conservation projects being undertaken by the larger Philippine companies involve investments considerably greater than P4.2 million. In most cases, those companies have elected to bypass the benefits of the DLF program. In some other instances, such as PLDT and Benguet, they have selected a portion of their energy conservation program that qualifies under TTEM guidelines and have applied for a DLF sub-project.
 - o Third, apparently many local companies wish to buy energy conservation equipment from Asian or European suppliers rather than American/Philippine equipment to qualify for a DLF sub-project.
13. The TTEM marketing to commercial banks has apparently not focused on selecting those institutions that could supply the most assistance to TTEM. The focus seems to have been to accredit any institution that applied and qualified. Unfortunately, the result is that banks which might have provided the most useful marketing support to the DLF program were not targeted for special attention. In addition, the follow-up by the TTEM staff with interested banks seems to have been uneven or non-existent.
14. DLF appears to have lacked an effective marketing effort. The results to date would likely have been better if there had been a more carefully planned and coordinated marketing effort to work with selected commercial banks to reach their customers with energy conservation needs, and if the marketing effort had emphasized the attractive return on investment aspects of the projects to the company financial management. Representatives of two accredited banks were interviewed and indicated a willingness to market the TTEM project if their loan officers were properly informed on the specific project requirements and given literature to provide their clients with clearly stated details of the project conditions, application requirements and

individuals to contact. In addition, using the other private sector organizations connected with TTEM and supporting their efforts with conscientious follow-up, would in all likelihood have attracted a number of companies with qualified sub-projects in 1988.

15. No conclusions could be drawn on the loan administration functions and how well they would serve the revolving loan fund needs since no loans have been taken down to date.
16. Though some excellent short-term experts have been sent by RMA, they have not been highly effective in promoting energy conservation. The seminars and training sessions in which they have participated have often been poorly attended. They have not been able to develop projects in their fields of specialization during the short periods of their visits. In two cases energy analysts were sent to design and to assist in setting up energy data bases and computerized analysis systems. There was no apparent follow up taken by TTEM to establish and develop these data bases as a useful planning tool. Unless the project is restructured to simplify their mobilization, there appear to be insurmountable obstacles to using U.S. short-term consultants which makes it more attractive to draw on the pool of expertise available in Manila.
17. The location of the TTEM project in a military encampment which has relatively difficult access is an impediment to the effective marketing of the project.
18. The GOP has met its obligations to the TTEM Project to date. The TTEM Project is currently expanding its activities outside of Manila and has undertaken a number of activities in Cebu. None of these activities took place in the period between December and March. It is reported that such activities may be curtailed in that period as the GOP is unable to pay travel expense for its personnel. Such curtailment would significantly impact the effectiveness of the project.

SECTION 14

RECOMMENDATIONS

The following recommendations are designed to make a continuance of the TTEM project more effective.

1. The TTEM Project Director should, with the assistance of the RMA Project Consultant, draw up a revised plan for the development and implementation of the TTEM, including:
 - o Definition of target industries and commercial building operators, i.e.:
 - Large industries
 - Small and medium sized industries
 - Multi-nationals
 - Nationwide or regional targeting
 - o Redefinition of target technologies taking into account national priorities such as the predicted shortage of electrical power, identified conservation needs, limitations of the DLF fund and the activities of the other OEA managed energy conservation projects.
 - o A revised implementation plan including the measures to be taken to achieve the stated goals; a realistic target in terms of the number of loans to be made, industries and technologies to be covered and total loan amount; a reporting system; and a regular internal review mechanism to assess achievement.
 - o Requirements of logistical and technical support to achieve the stated goals including assigning a performance responsibility for professional staff.
2. OEA should be encouraged to provide an effective coordinating mechanism for the different energy conservation projects under its control. Changes such as having a central data bank where records of activities are maintained, a common reporting form on site visits ensuring the compilation of essential information for policy making and strategy development, the existence of a common library and holding of regular meetings between project heads under OEA supervision could assist in improving the effectiveness of these projects.
3. The current TTEM senior staff under Project Director seems competent to direct the marketing of the DLF and to undertake technical evaluations of proposed projects and to carry out the administrative work necessary. It is recommended that the Project Director be given greater responsibility and accountability for the day-to-day direction of the project including the selection of the new Project Consultant; the selection and scheduling of short-term consultants, both expatriate and local; the selection and organization of TTEM staff and the promotion

of TTEM activities including the preparation of TTEM publications, meetings, style of correspondence and other promotional activities.

4. Careful consideration should be given in the selection of a replacement for the current RMA Project Consultant who is completing his current contract. In the opinion of the evaluators, the Project Consultant should be capable of providing planning support to OEA in preparing policy directives to the TTEM project. This will include both the identification of appropriate fields in which the project should operate and preparation of an organizational framework. For example, the potential value of value of power factor correction to the electrical grid has been commented on. The Resident Consultant should be capable of organizing and implementing a conclusive study on power factor correction including an assessment of the feasibility of crash program and a plan of implementation. Insofar as he personally does not have the technical skills in all aspects of the subject, he should identify suitable local and U.S. experts. The Project Consultant should be capable of providing technical and organizational support to the Project Director in all aspects of his work including the implementation of programs such as are described above, defining priorities, strategies for planning and marketing of TTEM activities and the ability to define and obtain such engineering and technical support as is needed. The Resident Consultant should therefore be capable of understanding technologies associated with energy conservation, but his skills need to be in market analysis, planning, marketing and above all in human relations.

However, it is recommended that the Project Director should have prime responsibility for defining the role and capabilities sought of the Project Consultant. It is recommended that RMA be given the prime responsibility (and accountability) for the selection of the individual. The evaluators recommend against making a selection from a resume, as resumes give little clue to a person's general capabilities or his personality. Should RMA's selection not meet the selection criteria, the Consultant's services should be terminated. Resumes should, however, be submitted to the Project Director, OEA and USAID to ensure that an individual meets certain minimum standards.

The Project Consultant should be provided with a locally hired administrative assistant to relieve him of some of the administrative work load and increase his effectiveness.

5. The use of U.S. based short-term consultants should be reduced and greater reliance placed on the use of local consultants. It is recommended that the procedure for the selection and mobilization of short-term consultants be simplified to the maximum extent possible. We recommend that the setting up of the administrative procedures for host country contracts for local consultants be given high priority by OEA, TTEM staff and USAID. The responsibility for defining the need and selecting the consultant should be placed with the Project Director in consultation with the Project Consultant. OEA and USAID oversight should be restricted to ensuring that the need and capabilities are

fully defined. Should RMA provide a consultant with qualifications different from those requested, they should not be paid for the consultant's services.

6. The TTEM project should coordinate through the OEA with other government agencies to seek out those technologies which best reflect the immediate priorities of the Philippines and offer the greatest potential for energy savings.
7. The DLF in concept and design seems properly planned to support the TTEM project. At a later date, after some loans have been taken down, it may become apparent that the loan administration needs adjustment but no changes can be suggested at this time.
8. The banks accredited for the DLF project as well as those expressing an interest in becoming accredited should be carefully reviewed by the TTEM staff with a view towards what and how each bank can contribute to the TTEM Program. The TTEM staff should conduct in-depth meetings with appropriate officials in each institution to determine what effort each bank is willing to contribute in support of the DLF project. TTEM should select banks that can offer the best conduit for reaching the companies and their management with energy conservation needs, and good credit suitable for a TTEM sub-project. No more than four to six banks should be selected for an intensive training program (1-2 days) by the TTEM staff with appropriate loan officers on the details of the TTEM project, its benefits, the application requirements and TTEM staff contact for follow-up.
9. The TTEM staff should supply the selected banks with an adequate supply of sales literature, application forms and so forth for the loan officers to leave with interested client companies. The TTEM staff should appoint one person to coordinate with each bank (the same TTEM staff member could handle more than one bank to answer questions, supply follow-up needs and to assure that each potential customer is well advised through the application process). It might also be appropriate to assign each bank an allocation of the DLF so that it can offer its customers loans without concern that another bank will exhaust their quota.
10. There needs to be a reorientation of the TTEM presentation to more effectively reach out to the potential user companies as well as to the right person(s) in those companies. This would require a re-ordering of the TTEM marketing effort to include a coordinated effort that encompassed some or all of the following aspects:
 - o Sharpen the focus of the technical effort to include only those technologies that offered a business attractive returns on their investments within the Philippine operating environment.
 - o Concentrate on those industries where significant energy conservation potential still exists in a way that can be

significantly assisted by TTEM technical assistance as well as financial assistance.

- o Concentrate in areas, such as the predicted electrical power shortage, where the TTEM Project can be seen to be responding to national priorities.
 - o Enlist the cooperation of the accredited banks by training a number of loan officers for initial marketing and client contact to be followed up by the TTEM staff.
 - o Revise the marketing/promotion brochures to more effectively present the TTEM story to a potential user on what to expect, how to apply and whom to contact. Make the brochures available in quantity for use by the bankers and to business associations for handing out at appropriate meetings and mailing to interested parties.
 - o Prepare a brochure or descriptive material aimed specifically at one or more industries where attractive approaches to energy conservation suitable for the industry and the TTEM program are explained in detail. Such a brochure could then be sent to all appropriate companies by way of a cooperating bank or a trade association.
 - o Allocate some funds for advertising to a targeted potential market to create an interest and a response.
11. USAID should make available a list of U.S. suppliers of energy conservation equipment and their Philippine agents from the U.S. Embassy Commercial staff. If it is not available in a useful form it should be prepared by the TTEM Project staff with assistance of RMA. This list should clearly indicate that it does not endorse any particular product or service.
12. The project should be relocated at some more central and convenient location in Metro-Manila where liaison with industry, banks, vendors and consultants would be more effective.

APPENDICES

APPENDIX A

METHODOLOGY

The evaluation was carried out by a two-person team who visited Manila for three weeks between November 2 and November 21, 1988. During this time they undertook both their investigations and prepared a draft copy of their report.

The team consisted of one engineer and a financial expert, one of which concentrated in the technical aspects of the project and the other in the financial viability of the Demonstration Loan Fund (DLF) program. They combined their efforts with respect to the organizational aspects of the project.

After an initial briefing by the Office of Energy Affairs (OEA) and Technology Transfer for Energy Management (TTEM) Project staff the evaluation team split, each member undertaking investigations in his own area. Interviews were held with people from the OEA; TTEM Project staff, the U.S. technical assistance contractor, Resource Management Associates, Inc. (RMA), including a telephone interview and exchange of telexes with their home office staff; commercial banks; industries which are potential users of the project; energy conservation equipment suppliers; related Government of the Philippines (GOP) institutions; the Philippine Chamber of Commerce and Industries (PCCI); the Energy Management Association of the Philippines (ENMAP); and other energy conservation projects under OEA sponsored by international or foreign aid organizations as well as USAID. A full listing of the organizations and persons contacted is contained in Appendix C.

In addition the evaluators reviewed a large quantity of documents related to the project including the Project Paper (PP), the Loan and Grant Agreement and amendment thereto, the RMA Contract and project files. A listing of these documents is contained in Appendix B.

The two evaluators followed somewhat different paths in order to more thoroughly cover the subject. The financial expert tended to seek interviews with people at a decision making level in the organizations he interviewed. The engineer, on the other hand, concentrated more on the operational level and his investigations included two plant visits, one accompanying a team from another energy conservation project, and another accompanying a TTEM plant visit. The financial expert normally had his interviews arranged by TTEM staff, whereas the engineer often set up his own arrangements. The evaluators feel that the spectrum of project related activities was best covered in this way. A short time was spent during two presentations, one a workshop organized by TTEM for TTEM and OEA staff, another a seminar organized by another project for an industry group at which TTEM participated.

During their period in the Philippines, the TTEM Project held its first seminar outside of Manila followed by a number of plant visits. The evaluators would have liked to have attended this but were unable to do so

because of time constraints. This seminar was held during the period of final preparation of this report.

The evaluators are satisfied that sufficient time was allowed to obtain a balanced view of the current operation of the project. They are, however, concerned that their investigations were not in sufficient depth to accurately chart a course for the project's future. A higher degree of investigation and analysis is required than the time allowed to do this. Therefore their suggestion for project development should be investigated carefully before being implemented.

APPENDIX B

BIBLIOGRAPHY

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ENMAP - 6th National Energy Convention, Programme of Activities

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RMA - TIEM Annual Report, 1987

RMA - TIEM Monthly Report, 2/1/88 through 2/29/88

RMA - TIEM Monthly Report, 5/1/88 through 5/31/88

RMA - TIEM Monthly Report, 3/1/88 through 3/31/88

RMA - TIEM Monthly Report, 7/1/88 through 7/31/88

RMA - TIEM Monthly Report, 8/1/88 through 8/31/88

RMA - TIEM Monthly Report, 9/1/88 through 9/30/88

RMA - TIEM Monthly Report, 6/1/88 through 6/30/88

RMA - TIEM Monthly Report, 1/1/88 through 1/31/88

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TIEM - RMA/GOP-TD-5, TIEM Training in Waste Heat Recovery and Combustion Control Monitoring & Control, Liegois and Warner Trip Report, January 1988

TTEM - Flyer, Demonstration Loan Fund Program - Lending Guidelines, Lenders version

TTEM - TTEM Channel, Vol. 1 No. 4, September 1988

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TTEM - RMA/GOP-TD-3, Technology Transfer for Energy Management Project, Demonstration Loan Fund, Roelefs Trip Report, September 30, 1987

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TTEM - Seminar on Combustion Monitoring and Control, Directory of Participants

TTEM - File, DLF Project Application, Matling Industrial & Commercial Corporation

TTEM - RMA/GOP-TD-2, Industrial Sector Energy Use Data Consolidation and Analysis, Lindsay Trip Report, July 10, 1987

TTEM - File, DLF Project Application, Philippine Aluminum Wheels, Inc.

TTEM - File, DLF Project Application, Philippine Long distance Telephone Company

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USAID - Reevaluation of the Technology Transfer for Energy Management Project, SGV & Co., March 1985

USAID - Project Paper, "Technology Transfer for Energy Management, (492-0381), 1985

USAID - RMA, Contract

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USAID - Mission Planning, Strategy Cable, Framework Cables, Memorandum from John S. Blackton, October 6, 1988

USAID - The Philippine Energy Sector and Assistance Strategy, Lines of Enquiry, Annex II, February 1984

Documents requested but which the OEA declined to provide:

RUE Project, analysis of small and medium industry sector

UNDP/UNIDO Project, report on project

US/ASEAN Project files

APPENDIX C

INTERVIEWS AND CONTACTS

Office of Energy Affairs

W.R. de la Paz Charisse Tablante	Executive Director, OEA Chief, Conservation Division
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TTEM Project Staff

Jose O. Garcia	Project Director
Rolando S. Custodio	Senior Project Officer
Marcial P. Semira, Jr.	Senior Project Officer
Rowena T. Villanueva	Supervising Information Officer I

U.S. Contracor - Resource Management Associates, Inc. and Subcontractors

Allan R. Evans	Resident Consultant
Steven R. Warner	Visiting Consultant
Mark Hanson	Home Office Manager (by phone)

Commercial Banks

Rizal Commercial Banking Corporation (RCBC)

Eric H. Gomez	First Vice President
Roger P. Dayrit	Assistant Manager

Private Development Corporation of the Philippines (PDCP)

Edwin T. Uy	Vice President
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Planters Development Bank

M. Agnes J. Angeles	Assistant Vice President
Edmundo B. Santos	Manager/Account Officer

Philippine Commercial International Bank

Jose Ramon F. Revilla	Senior Vice President
-----------------------	-----------------------

Potential Users

Republic Cement Corporation

Renato C. Sunico Vice President

Chemical Industries of the Philippines (SPIK)

Maria Luisa Y. Yu Vice President, Financial Services

Philippine Long Distance Telephone Company

Ricardo R. Zarate Executive Vice President
Dalisay C. Cadiz Vice President

Benguet Corporation

Alberto M. Leño Treasury Manager
Marcelino C. Reyes Assistant Vice President

Jacinto Iron & Steel Sheets Corporation (Accompanying TTEM plant Visit)

W. Ben J. de Jesus General Manager
Edward Rabutin Plant Superintendent

Fil-Hispano Ceramics, Inc. (Accompanying RUE Plant Visit)

Noberto L. Villaram President
Wilfredo A. Roble Project Manager

Armco-Marsteel Alloy Corporation

Max G. Paca, Jr. Vice President, Finance

Central Azucarera Don Pedro (Roxas and Company)

Jose G. Pimentel, Jr. Assistant Cashier

Government Institutions

Central Bank of the Philippines

Guillermo V. Soliven Managing Director,
International and Operations

Board of Investment

Marissa Concepcion Director, Construction
Materials Department

National Economic and Development Authority

Ponciano S. Intal, Jr. Director
Violeta C. Conte Chief, Public Utilities Division
Arturo L. Cebuma Public Utilities Division
Cecile Santos

National Power Corporation

Deogracias S. Peralta Vice-President, Planning Services

Equipment Suppliers

Electro Systems (Agents for Andover Controls)

Albert O. Buenaventura Group Manager

Management Industrial & Design Engineers, Inc. (Agents for
Westinghouse boiler controls)

Alberto R. Almera Managing Director
Booby T. Duya
Greg R. Alva Sales Engineer

Pacific Rim Combustion Control, Inc. (Agents for Westinghouse boiler
controls)

Raymond M. White

Philippine Chamber of Commerce and Industries

Tristan H. Calsanz Chairman, Energy Committee

Energy Management Association of the Philippines (ENMAP)

Greg S. Gonzales President

USAID

Robert E. Jordan Director, Office of Capital Developments

Conchita Silva Program Specialist, Energy

Other Energy Conservation Projects

RUE/GTZ Project

Albrecht Kaupp Project Consultant

SAL TAC II/World Bank Project

Benjamin Lim Project Director

UNDP/UNIDO Project

P. R. Srinivasan former Resident Consultant

APPENDIX D
SCOPE OF WORK

ATTACHMENT A
PIU/1 NO. 492-0381-
Page 4 of 10 pages.

EVALUATION SCOPE OF WORK

I. ACTIVITY TO BE EVALUATED:

Project Title: Technology Transfer for Energy Management
Project Number: 492-0381
LOP Dates: May 31, 1985 - June 30, 1990

II. PURPOSE OF THE EVALUATION:

To review the current status (accomplishments and plans) of the project, specifically:

- a. What each relevant organization is doing;
- b. How it affects achievement of project goals;
- c. How it could be improved (by reduction of impediments or implementation of new procedures and activities).

III. BACKGROUND:

On May 31, 1985, the Philippines and U.S. Governments signed an agreement providing for \$3 million in loan and \$2 million in grant funds to provide technical assistance and a revolving investment loan fund through the Philippine private sector to induce first-time adoption in the Philippines of tested energy conservation technologies for industry and commercial buildings. The GOP has committed itself to supplying an equivalent of approximately \$732,000 in counterpart funding.

The Office of Energy Affairs, Conservation Division, has primary responsibility for the GOP project implementation which is carried out through an AEC contract with a technical assistance contractor, acting as advisor to the project and through a four-person professional team employed by the project with U.S. funds and supported by GOP personnel assigned to the project.

While the GOP started work on documents required to satisfy Conditions Precedent to the Project, initial project implementation activities moved slowly. After presidential elections were announced in November 1985, the attention of GOP counterparts turned markedly to politics, and with the February 7 election results, implementation activity came essentially to a halt until new GOP Officials in the energy sector were named.

ATTACHMENT A
PIO/T No. 492-0381-
Page 6 of 10 pages

All TTEM project contracting was halted from January until July 1986 in order not to mislead proposers/bidders. In August 30, 1986, both governments agreed to reduce the full amount of loan funds previously provided by USAID so that no loan funds are provided under the Project Agreement, and to increase the amount of Grant funds by the full amount of loan funds. Complex negotiations delayed the signing of a technical assistance contract until December 1986 and arrival of the resident advisor until late February 1987. The recruitment of the project director could not be concluded until after the technical assistance Resident Advisor arrived in February. The final selection and contracting of TTEM senior project staff was on October 30, 1987. Two months later, all CPs to initial disbursement were met on December 11, 1987.

The TTEM Project Paper written in April 1985 had envisioned that all CPs to initial disbursement would be met by November 1985.

To date, all staff positions are now filled, and staff are performing their project functions. The project staff and host country professionals have received training in technologies and analytical methods. Foundation activities for the Demonstration Loan Fund have been completed and essential equipment has been purchased for initiation of project activities.

On June 1988, the OEA has requested USAID to make the initial disbursement of funds for the TTEM DLF for the period July - September 1988. These funds would cover the estimated DLF budget for 5 subprojects currently approved or pending approval during this period. This disbursement request is a significant milestone for the project.

IV. STATEMENT OF WORK:

The consultants shall review the work carried out to date or contemplated, considering specifically the following questions:

1. Is the project properly planned, organized, and directed to meet its basic objective of improving energy efficiency in the Philippine economic sectors that are heavily dependent on fossil fuels and electricity? Do project plans/actions require modification in view of current economic conditions or project experience so far?

2. Has the Government of the Philippines (GOP) established a sufficient capacity to implement the project, specifically technical staff, management direction, administrative support, and facilities? Does the GOP provide adequate coordination with other relevant organizations and activities, including other donor projects, in order to optimize the benefits of the project?

3. Do industrial/commercial energy users want and need this project? How is this reflected through their participation of TTEM activities? Is the TTEM Demonstration Loan Fund (DLF) marketing plan appropriately directed to enhance this participation?

4. Are the technologies chosen for emphasis in the DLF appropriate to the project objectives? Specifically, are they technically and financially viable? Are they acceptable to energy users and capable of widespread replication in the Philippines? Can they have a substantial impact on energy consumption in the Philippines?

5. Are private commercial lending institutions receptive to participation in the DLF? Are there sufficient accredited institutions (approved or pending) to implement the DLF?

6. Have other private sector enterprises, especially equipment vendors, service organizations, and engineers, shown interest in the project? How have they participated, how can their participation be increased, and how do they view project activities to assist market development for energy conservation equipment?

7. Are there policies or regulations of USAID or the GOP which particularly facilitate or impede the acceptance of the DLF? How can the latter be modified to strengthen the project?

8. Is technical and economic information about viable energy conservation measures being well prepared and presented to appropriate Philippine audiences? What plans exist for future information dissemination?

9. Is the U.S. technical assistance contractor providing technical services adequately and in good coordination with the Office of Energy Affairs (OEA)? What additional services could/should be provided?

10. How can USAID itself assist the project further to achieve its goals?

The consultants will be assisted by the TTEM Staff in carrying out the aforementioned tasks.

V. METHODS AND PROCEDURES:

On carrying out the evaluation, the following specific activities should be included:

A. Review documents

1. Project Paper and Project Agreement
2. Technical Assistance Contractor (Resource Management Associates) monthly reports.

ATTACHMENT A
PIO/T No. 492-0381-
Page 7 of 10 pages

3. RMA Annual Report
 4. RMA short-term consultant trip report
 5. Project Plan(s)
 6. USAID funding level (budget)
 7. Host Country (Office of Energy Affairs) counterpart funding
 8. Project Implementation Letters, major correspondence
- B. Interview Key Personnel
1. OEA
 - Executive Director
 - Chief of Conservation Division
 - International Programs Coordinator
 2. TTEM Project Director and Senior Officers
 3. RMA Resident Consultant
 4. Steering Committee (selected members)
 - Bankers' Association of the Philippines
 - Central Bank
 - Board of Investments
 - Energy Management of the Philippines
 5. Private sector participants (selected)
 - Industrial/Commercial energy users
 - Bankers
 - Vendors/Consultant
 6. RMA home office staff (Madison, Wisconsin)

VI. COMPOSITION OF EVALUATION TEAM

The qualifications of the evaluation team (firm or individuals)

1. Capability to perform work competently and on the schedule required.
2. Experience in international development projects, specifically including energy and finance.
3. Objectivity - No previous connection with (or vested interest in) project.

ATTACHMENT A
PIO/T No. 492-0381-
Page 8 of 10 pages

4. **Skills/Expertise Required:** The consultants should preferably have advanced degrees in engineering and finance. The consultants should have broad work experience in the energy conservation field and a background in implementing energy conservation programs in the industrial and commercial sectors.

VII. REPORTING REQUIREMENTS

The contractor will provide USAID and OEA a draft of its report three weeks from commencement of the work. Upon completion of the field work and before leaving the Philippines, the Contractor will provide USAID and OEA a joint briefing on its preliminary findings. The Contractor will issue the final report within one week of receiving USAID and OEA comments on the draft report. The final report should include an Executive Summary.

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APPENDIX E

RESPONSIBILITIES OF THE RESIDENT CONSULTANT

The following pages were prepared by the Resident Consultant at the request of the evaluators. The description of the TTEM Resident Consultant (written as part of TTEM planning exercise, 7-18-88) and shown on the second page of the apperdix have not been endorsed by OEA or USAID. The Resident Consultant's responsibilities, as included in the RMA Contract, are correctly defined on the third page of the appendix.

TTEM RESIDENT CONSULTANT DUTIES/TIME

A. Evans
11-14-88

Notes: These are approximate percentages based on how my time has been spent over past 20 months in Manila.. Each number itself is probably good to within only 25 % or so.

	<u>% of time</u>	<u>COMMENTS</u>
Coordination with RMA	10	Some personal time also spent on this
Coordination with USAID	8	Includes inter-office transit; also some personal time spent
Reporting (deliverables)	4	
Project work plans/budgets	8	Less budgeting work in future
Short-term consultants		
Pre-planning, approvals	10	
Collaboration, follow-up	10	
Local expenditures/accounting	10	Should be OEA, not RMA (in my opinion)
TTEM staff recruiting	8	Should be small or zero in future
Staff training (plans)	2	More as US trips begin
Tech ^(general collaboration) training/advice to staff	10	
Seminar/workshop plan/admin	6	
Presentations (incl prep)	4	
Tech assistance to clients	8	Should be more in future, including monitoring/analysis
TTEM/OEA admin meetings	2	
Misc.	20	

TOTAL	120 %	

TTEM RESIDENT CONSULTANT DUTIES

A. Evans

(Written as part of TTEM planning exercise, 7-18-88)

1. Write and submit monthly report to USAID and OEA; draft RMA annual report on TTEM. (These reports are RMA contract deliverables.)
2. Communicate at least weekly (often daily) with RMA Home Office on project-related topics.
3. In consultation with RMA, OEA, and USAID, assist in development of work plan and budget.
4. Advise and assist TTEM staff and OEA on technical and managerial tasks.
5. Assist in development of DLF project evaluation criteria and project selection procedures.
6. Serve as member of TTEM Subproject Selection Committee.
7. Help plan and arrange RMA short-term consultant trips; provide briefing and assistance to consultant in his work.
8. Help plan and arrange TTEM staff training (local and US).
9. Assist OEA as requested in TTEM staff recruiting.
10. Assist with seminars, workshops, and other meetings.
11. Negotiate and administer local RMA subcontracts, with RMA approval and in coordination with OEA.
12. Purchase local equipment and supplies, with approvals of RMA, OEA, and USAID (as required); coordinate with RMA on US purchases.
13. Assist RMA and OEA in coordinating with USAID on project status, regulations, approvals, etc.
14. Advise and assist in development, management, and monitoring of Demonstration Loan Fund projects being implemented.

TTEM Resident Consultant Duties (as stated in RMA contract)

1. In consultation with USAID and BEU, preparing a detailed work plan and budget for approval by the project steering committee.
2. Identifying the project staff jointly with BEU.
3. Assisting the TTEM project director, once hired, as needed.
4. Development and finalization of project evaluation criteria and project selection procedures.
5. Identification of specific demonstration targets.
6. Training of TTEM staff in project evaluation and financing.
7. Identification of technical assistance and information needs and organization of courses, seminars and workshops to meet these needs.
8. Implementation of selected demonstration projects including the supervision of engineering, financing, procurement and monitoring activities.
9. Preparation of annual reports and budgets as required.

APPENDIX F
COMMENTS OF OEA ON THE DRAFT REPORT

Office of the President
of the Philippines
Malacananang

11-469
RECEIVED

Nov 28 9 02 AM '88

Office of Energy Affairs

USAID

DIV	ACT	IN
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AN		
DUE TO		
12-8-88		

25 November 1988

Mr. Robert Jordan
Chief
Office of Capital Development
Ramon Magsaysay Center
Roxas Boulevard, Manila

ACTION TAKEN	
MAN	Other
Type	No.
Date	Time

Subject : Technology Transfer for Energy Management
(TTEM) Project
AID Project No. 492 - 0381
Draft Evaluation Report of Checchi Consulting, Inc.

Dear Mr. Jordan :

Hereunder are our comments regarding the draft evaluation report of the evaluation team from Checchi Consulting, Inc. :

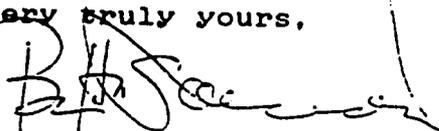
1. Page 1 -- missing text at bottom of page
2. Page 3, Appendix B, which UNDP report and ASEAN/US project files were not provided but were requested?
3. Page 9, 1st pgph -- The "some distance" to ERDC is approximately 15 KM (?) from OEA, and OEA personnel go there frequently.
4. Page 11, last pgph -- Position is "Chief" of the Conservation Division. See also Appendix C. Ms. Tablante's name is "Charisse". Also, it is the "Executive Director", not a "Director General" which heads the Steering Committee.
5. Page 12, 2nd pgph -- Office of Energy Administration should be Office of Energy Affairs. Also, in the last pgph, note that the position is "Project Director".

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6. Page 14, 3rd pgph -- Word "anomalous" is unclear. In 5th line of same pgph, intended wording is apparently "they do not appear to be offered ...".
7. Page 20, last sentence of top pgph -- Unclear.
8. Page 33, last line -- For clarity, indicate that SPIK is the same as the Chemical Industries Association mentioned in Appendix C, page 2.
9. Page 42, Conclusion 5 -- Unclear.
10. Appendix B -- was not RMA first Annual Report (1987) also used ?
11. Appendix D, page 2 -- Should include note that this is an "unofficial draft" for internal TTEM staff use, not intended to unilaterally revise RMA contract.

Should you need further clarification on these comments, please advise.

Very truly yours,



WENCESLAO R. DELA PAZ
Executive Director



APPENDIX G
COMMENTS OF RMA ON THE DRAFT REPORT

Comments from RESOURCE MANAGEMENT ASSOCIATES (RMA)

ON DRAFT TTEM PROJECT EVALUATION REPORT

11-25-88

RMA has quickly reviewed the draft Project Evaluation Report under the time constraints in place.

In general, we find the document quite useful, and we believe that the recommendations will be helpful in planning the future of the TTEM project. There are, however, some areas of the draft Project Evaluation Report that need to be clarified. The comments that follow are intended to help in this clarification.

We appreciate the opportunity to comment on this draft. We will, of course, also have a formal response to the final document.

(Note by A. Evans: These RMA comments were done collaboratively by the RMA Home Office in Madison (Mark Hanson and Charlie Fafard) and myself in Manila. I also provided my own comments to OEA for their consideration, so there may be a few duplications.)

Specific comments:

1. Page 1, bottom of page--Missing text?
2. Page 2, last pgph--Activity prior to the arrival of the Resident Consultant was significant, as OEA can detail.
3. Page 4, last sentence--Please clarify. This appears to be contradictory to text on pages 5 and 6 indicating that TTEM direction is consistent with the new energy and economic situation.
4. Page 5, 2nd pgph--The initial focus of TTEM activities within the Metro Manila area was a deliberate plan for the early stage of the project, to get it off the ground, developing procedures and staff experience. It has always been understood that the project activity would spread out to cover the whole country. The recent move to extend the project activity outside Metro Manila is the next step in the marketing plan.
5. Table 3-1--Although TTEM can and does conduct energy audits, or collaborate with others in them, the audit per se is not a goal of the TTEM project. Also, the table should include an additional heading of conservation project construction and implementation.

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6. Page 8--While calling the RUE project comparatively active and successful, the report provides no evidence. Are the evaluators "comparing apples and oranges"? How many "appropriate technology" projects have actually been implemented? If success is measured by the number of audits and plant visits, how many audits equal one conservation project implemented?

7. Page 10--The most important (and unique) objectives of TTEM are to get actual conservation projects in place and then to use them as demonstrations for other projects. The financing itself is only one aspect of this TTEM emphasis.

8. Page 12, 1st pgph--Certainly there must be a balance among freedom, coordination, and accountability. In practice the TTEM Project Director does have considerable autonomy within the scope and plans of the project. OEA "control" is exercised in areas beyond those day-to-day matters, specifically those which commit OEA, or for various administrative approvals for use of OEA resources. Also, although not wishing to restrict the project unduly, it is appropriate for OEA to have close and frequent interaction to maintain the cooperation among OEA projects.

WP 9. Page 13, top pgph--The amount is \$1.0683 million, which includes not only staff, consultants, and equipment purchased but also the first disbursement for the DLF.

WI 10. Page 13, 2nd pgph--It would be useful to summarize what progress was expected by the TTEM management and Steering Committee, based on these interviews.

11. Page 13, 3rd pgph--Unclear sentence.

WI Also, while wholeheartedly agreeing on the usefulness of planning, RMA feels that the text overstates its lack in the TTEM project. As revealed in the first annual report of RMA, there were specific milestones and most of these were met. Critical milestones included hiring of staff, establishing TTEM loan procedures, and meeting conditions precedent. Note also that RMA had proposed a trip by Ms. Mary Worzala of the RMA Home Office early in 1988 to assist with planning, but OEA and USAID postponed it, and it has not yet occurred.

12. Page 14, 3rd pgph--Word "anomalous" is unclear.

WI In 5th line of same pgph, intended wording is apparently "they do not appear to be offered...." In fact, during the recruiting of these senior staff, OEA recognized and made clear to the candidates that these positions did not offer a career path beyond the project life. There is of course the possibility that if the project can be successful it might attract additional funding, and hence perpetuate itself, but OEA was careful not to make promises. Candidates selected

recognized the project as an opportunity to participate in an important activity, gaining experience which they can use after the project ends, to the benefit of themselves and the country.

RMA agrees that both the project itself and the staff need more time. In August 1987, OEA requested in writing that the Project Assistance Completion Date be extended, thereby allowing the full five years of project duration originally anticipated in the Project Paper. OEA's request was to move the PACD from June 30, 1990 (five years from the original signing of the Project Agreement) to December 31, 1991 (five years from the signing of the technical assistance contract). USAID has not acted on this request, stating that they would wait for the results of this evaluation. Based rather on the actual full staffing and initiation of the DLF, a five-year period would extend the PACD to the end of 1993, as the draft report recommends.

13. Page 15, 3rd pgph--It is not precisely correct to say that the Resident Consultant is to "report" to either the TTEM Project Director or the Head (sic) of the Conservation Division. According to the RMA contract, he "will work closely with the project director and will report directly to USAID Manila." Nevertheless in practice this distinction is somewhat subtle. As stated both here and on page 37 (3rd pgph) the various organizational changes did have an impact on progress, and the Resident Consultant could perhaps have been more effective in helping OEA through those changes. Note that there were also organizational and personnel changes within USAID during this same time period.

14. Page 16, last pgph--Note that OEA has not yet set up host-country contracts with local consultants, although OEA discussed the possibility for these with USAID earlier in 1988. See also discuss. on below re page 31.

15. Page 17, 2nd pgph--TTEM has conducted the two trips to Cebu, in July and in November 1988.

16. Page 19, 3rd pgph--The statement that energy conservation is an "ethic" is not entirely clear. TTEM is advocating conservation to improve profits and competitiveness.

17. Page 19, 3rd pgph--Note that many Philippine firms (by some accounts 70%) have significant foreign ownership. To the extent that this is true and that the multinationals are interested in conservation, the statement that "the majority of firms" have little interest in conservation may be unfounded. Also, a relatively small percentage of firms dominate energy use and costs.

18. Page 20, last sentence in top pgph--Unclear.

19. Page 20, 2nd pgph--As the Evaluation Team has seen, the

TTEM project has endured many growing pains during its brief existence. Many of the staff are going through on-the-job training as the project develops. RMA recognizes that the first projects selected by TTEM may not all be the most ideal projects, but it is important for the work to get under way. Once projects are being built, word of TTEM will spread and hopefully more applications will be submitted for TTEM funding. TTEM can then be more selective in choosing the best of these.

20. Page 21--Discussion of selected technologies from the PP does not include later thinking. It is clear to RMA and TTEM that the project is open to, and in fact is accepting, other technologies.

21. Page 22, 2nd pgph--The RUE project gave technical assistance in the installation of the diesel-engine exhaust system mentioned. TTEM also gave technical assistance on one specific question related to this installation. We agree that this particular application of heat recovery is limited; however, in general, applications of flue-gas heat recovery (from boilers, kilns, furnaces, etc, as well as engines) are widespread and highly significant in energy-conserving potential. Indeed, according to ENMAP, this technology is cited by industrial energy managers as one of the highest priorities.

22. Page 22, 3rd pgph--The implication that the the consultant referenced had capabilities only in "building insulation" is incorrect. (See also page 38) Although there are not yet any DLF projects in any type of insulation applications, there has been considerable interest not only in buildings but also steam lines, industrial freezers, and refractories.

23. Page 23, 2nd pgph--The topic is "steam distribution systems and maintenance procedures," not merely maintenance. It includes proper application of steam traps (as well as their maintenance), condensate recovery, and other techniques of good steam system design and operation. None of these is novel but all are commonly neglected.

24. Page 24, 4th pgph--TTEM and RMA have limited latitude in which to change the project.

25. Page 27, 3rd pgph, last sentence--It is true that the small companies have not yet been the ones applying for DLF loans. This may to some extent be a matter of our targeting. Given the nature of a demonstration project and the desire to get a few off the ground, we initially focused on larger companies, while still recognizing that the more likely ultimate participant would be the medium to small companies. It should also be noted that in some of these smaller companies, we have had initial inquiries and even applications, but we did not proceed because they were clearly not creditworthy. How-

ever, future effort will move more in the direction of small and medium firms.

26. Page 28, 2nd pgph--DLF loans have been available since Feb 4, 1988, the date of Steering Committee approval of the interest rate and selection criteria. PFI accreditation began after that. Reference to August 30 is unclear.

27. Page 31--There is a great need to involve manufacturers, vendors, and the A&E community. RMA has encouraged this (e.g., see RMA letter to Atty. dela Paz of May 20, 1988) in the case of A&E firms. Establishing contact with the A&E firms and vendors has also been included by RMA as objectives of short-term consultant trips. Other TTEM priorities have prevented this from developing as much as either TTEM or RMA would like, and to date we have not been able to adequately involve manufacturers, vendors, and the A&E firms. USAID funds are available for OEA/TTEM host-country contracts for this. See also comments re page 38.

28. Page 34, top pgph--In addition to providing an RMA short-term consultant, the Resident Consultant and Project Director will speak or serve as panelists, as they did last year. Note also that OEA through TTEM will indeed co-sponsor the event, in the amount of 43,000 pesos via an RMA subcontract. (This amount is probably about 1/3 of the total cost of the entire event.) Finally, TTEM will also rent an exhibit booth, at a cost of 6000 pesos, as we also did last year.

29. Page 35, 3rd pgph--Certainly the use of "high-cost short-term experts" should be avoided where such skills can be provided locally and where the seminar is the only purpose of the trip, unless the event is essential and extremely well planned. In those referenced, the seminar itself was only a small portion of the full work scope of the consultant.

30. Page 37, top pgph--Number of consultant trips: There have been 9 such trips, of which Steve Warner has come twice, and his 1987 trip was coincident with that of Bill Liegois.

31. Page 37, 3rd pgph--Re word "report" see comment for page 15.

32. Page 37, 4th pgph--The balance between the "do" role and the "advise" role is not always easy to maintain. The attempt has been to work with a local counterpart, not simply to do alone. The material presented in Appendix D, page 2, was drafted for the information of TTEM staff during an exercise to improve the TTEM organization internally and in relation to OEA. Any error on the side of "advice" rather than "action" represents an attempt to emphasize this approach. It was certainly not intended to unilaterally reinterpret the RMA contract. As stated in Appendix D, page 1, the time breakdowns are approximations based on actual experience over the past 21 months; they are not precise, and they are

expected to change somewhat in the future.

33. Page 38, 2nd pgph--Again re numbers of consultant visits, there were actually 6 trips organized before the senior staff arrived, one of which (Warner and Liegois at the same time) occurred just after the senior staff began.

34. Page 38, 3rd pgph--Again correct the number of trips. RMA admitted initially that the first two trips were largely exploratory and introductory. However, that of Fafard has been important to his TTEM participation as chief technical person in the RMA Home Office. Those of Lopez and Lindsay have not yet borne further fruit directly, but we would certainly encourage more work by OEA, with or without RMA collaboration. Other trips accomplished their stated objectives, as negotiated in advance with OEA, although we generally agree with the "problems" (perhaps not always "insurmountable") that you list.

As commented re page 22, the consultant on insulation, a professional engineer in private consulting practice for 25 years, who also often teaches short courses in university engineering extension, was not limited in his expertise to roof insulation, and to the extent that he did discuss that topic, his breadth of knowledge and level of analysis obviously exceeds the kind of "rule-of-thumb" advice one might obtain from a store clerk. Note also from his trip report, as referenced in Appendix A, that his work topics included insulation applications other than those for buildings, specifically those for steam pipes and for industrial freezers.

35. Page 38, last pgph--Local consultants are included in the Project Agreement and overall project budget. It is true that the RMA contract "envisioned" the use of local consultants, as some contract wording indicates, but in fact the contract does not include them in its work scope or budget. The use of local consultants has been discussed several times with OEA and USAID, and RMA encourages it. Specifically, RMA offered (letter of May 20, 1988) to undertake the contracting of local consultants on a limited basis until OEA could institute contractual arrangements. Such arrangements would most likely be by one or more host-country task-order contracts, competitively selected, for indefinite quantities of work in specific areas of expertise. The Resident Consultant has had personal experience defining and managing such contracts, and is generally familiar with applicable USAID regulations related to them, so could provide help to OEA.

36. Page 39, 2nd pgph--The use of US short-term consultants should certainly be reconsidered in the light of experience. It is not correct, or even consistent within this draft report, to dismiss them all as "unproductive." RMA agrees that use of US consultants should be carefully planned and evaluated in close collaboration with OEA. In general, as

stated earlier, RMA strongly endorses the concept of having one or more Filipinos as a "counterpart" for each US consultant. RMA also suggests that an appropriate focus for US consultant trips be specifically on the local consultants, never duplicating but expanding on their experience, so that they are direct beneficiaries as well as TTEM staff.

37. Page 39--Information dissemination is important. There must be sound, technical follow-through. That is a practical, engineering problem.

38. Page 39--Draft report needs to clarify the qualifications proposed for the next Resident Consultant.

39. Page 42, Conclusion 5--Unclear.

40. Page 44, Conclusion 12 (but typed as 13)--Planters is now accredited as the fifth PFI. See also page 26.

41. Page 44, Conclusion 13--Typo in first line.

42. Page 45, Conclusion 16--No one anticipated that a project would be completely set up in a three-week visit. The question is whether the consultant was able to help TTEM in their ongoing work with clients. In fact, the consultants have contributed to projects being initiated and/or advanced.

43. Page 47, Recommendation 3--RMA agrees that Mr. Garcia and the senior staff are capable in these areas. However they can be more so with the support of experienced outside technical consultants, both local and RMA.

44. Page 48, Recommendation 4--RMA does not see an either/or situation in regards to technical engineering ability versus planning and marketing skills. We feel that a resident advisor can help with all of these. The ultimate success of the project will rest on the successful construction and implementation of sound projects. Engineering experience in promoting and setting up these types of projects is essential.

45. Page 49, Conclusion 11--Good. TTEM Staff and the Resident Consultant have asked verbally for such information from the US Embassy Foreign Commercial Service, but it has not yet been provided.

46. Appendix B--The RMA First Annual Report (1987) was also provided. Was it not used?

47. Appendix D, page 2--Should include note that this is an "unofficial draft" for internal TTEM staff use, not intended to unilaterally revise RMA contract. (See also comments on pp 37-38.) Neither of pages 1 or 2 were "approved" in any way by RMA, USAID, or OEA. Please include this notation on the title page of Appendix D.

APPENDIX H
RESPONSE TO COMMENTS ON THE DRAFT REPORT

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A. OEA Comments

1. Text added
2. While the evaluators could not identify the precise titles of the documents sought, the Chief of the Conservation Division had no difficulty in refusing access.
3. Text corrected.
4. Text corrected.
5. Text corrected.
6. The reader is referenced to Section 11 for a definition of the use of the term "anomalous". The typographical error has been corrected.
7. Text re-written.
8. The association's name has been cross-referenced.
9. Conclusion 5 has been expanded.
10. RMA first annual report has been added to the bibliography.
11. Appendix D, page 2 has been notated as requested.

B. RMA Comments

1. Text added.
2. While administrative work necessary to implement the project was undertaken prior to the arrival of the Resident Consultant we are not aware of any actual project implementation work.
3. The fortuitous chance that two out of three of the first DLF sub-projects are for power factor correction is not regarded as a response to the new energy situation in the Philippines. At no time during our evaluation was the electrical power shortage mentioned by a member of the OEA, TTEM or RMA staff as a new situation to which the TTEM Project should respond. In fact, when one of the evaluators criticized power factor correction as not being a true energy conservation measure, the Resident Consultant agreed without pointing out its potential in the current situation.
4. Comment noted.
5. Comment noted, but we do not see the need to amend the table.

6. In addition to the energy audit work by the RUE Project, an energy conservation project at Fil-Hispano Ceramics, implemented by the project was visited by an evaluator. The evaluators do not know of any energy conservation project implemented by the TTEM Project at this time.
7. We agree completely with the comment, but we do not see any conflict with our text which only refers to the concept of others which we gathered from comments made during interviews. Unfortunately, no conservation projects are in place at this time and the potential for demonstration has yet to be demonstrated.
8. Our thoughts on the separation of responsibilities has been expanded upon in the text.
9. The figure has been corrected.
10. Please refer to the revised text.
11. Please refer to the revised text. We fail to understand the relevance of the proposed trip by Ms. Mary Worzala.
12. The reader is referred to section 11 for an interpretation of the use of "anomalous". We note the remainder of the comment. We have deleted the two final sentences of the third paragraph on page 14 of the draft report, as they are a recommendation. We have decided not to make a recommendation for USAID to commit itself to continue the project. After careful review, the evaluators do not believe that the project has been sufficiently developed at this time to justify such a recommendation. As pointed out in the RMA comment, USAID may continue the project if it proves itself successful. There is, therefore, an implicit incentive for TTEM senior staff to make a success of it provided they are given the direction and support of OEA.
13. Please refer to the revision of the text.
14. We recommend that priority be given to the setting up of the administrative mechanisms for hiring local consultants. This has been noted in Recommendation 5.
15. The point made concerned potential TTEM activities outside of Manila in the period between December and March. We do not believe that any such activities have been undertaken by the TTEM Project in this period. We express concern that the TTEM Project's activities outside of Manila not be curtailed for four months of the year. If they are so curtailed there may be good reason to re-consider continuing the project. Please see Conclusion 18.
16. The wording has been amended to improve clarity. While advocating improved profits is an appropriate marketing tool, it is not the driving force behind the TTEM Project.

17. The term "multi-nationals" refers to major corporations such as Armco-Marsteel which operate internationally and have significant home country technical resources. It does not refer to independent companies in the Philippines which have significant foreign ownership.
18. Please see revised text.
19. The evaluators have identified marketing as a project need. This could improve the range of DLF loan applications and allow more selectivity. Our review of the applicability of the technologies of the DLF sub-projects being currently processed has been added as a final part of Section 7.
20. See response to comment 24.
21. Our review of this technology has been substantially altered as a result of this comment. When an evaluator visited Fil-Hispano Ceramics in company of the RUE Project he asked if they had received any technical assistance from the TTEM Project. The answer was negative. Fil-Hispano indicated that it had considered but decided not to apply for a DLF loan. (It was indicated to the evaluators that the company's credit rating might not be sufficiently high to qualify.)
22. Reference to this expert has been deleted from this section. Please see revised text in Section 11.
23. Please see revised text reflecting our change of position.
24. This comments appears to contradict Comment 20 and the actual performance of the TTEM Project. While it is difficult to judge the intentions of the writers of the PP, nowhere is it indicated therein that the DLF was intended to support a demonstration project such as an oxy-fuel burner for an electric arc steel furnace owned by a U.S. based multi-national, one of the DLF sub-projects currently being processed. It is our opinion that the latitude recommend by the evaluators is considerably less than the latitude already taken by the TTEM staff. Essentially, what we are suggesting is a rational and planned approach to selecting new technologies rather than the unplanned ad hoc approach currently used.
25. Please see revised text.
26. Please see revised text.
27. Comment noted.
28. Please see revised text.
29. As indicated in Section 11, the evaluators do not accept that short-term consultant visits have been productive overall.

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30. Text corrected.
31. Please see revised text.
32. Comment noted.
33. Text corrected.
34. The number of visits has been corrected. The evaluators did not see any report on the results of Mr. Fafard's, visit but we do accept that it may have been valuable. It should not, however, be seen as a short term consultant visit as intended in the PP. It is possible that if the procedures and responsibility for mobilizing short term consultants could be simplified and RMA could respond promptly to requests with the right caliber of people, the problems could be surmounted. We are doubtful that this could be achieved in practice.
35. Please see the revision to Recommendation 5.
36. While the comment is noted we do not see reason to revise our findings. We do not perceive that the short-term consultants supplied by RMA are necessarily of higher caliber than the local experts we met in the Philippines. We are not sure that the locals would be the beneficiaries of expatriate experience. The reverse could, on occasion be the case.
37. While technical follow-through is important, this does not have to be undertaken by the Resident Consultant. This could be done by local consultants under the technical supervision of the Resident Consultant.
38. Please refer to expanded Recommendation 4.
39. Please refer to the revised text.
40. Text corrected.
41. Text corrected.
42. While the comment is noted we do not feel that we should change the thrust of our conclusion.
43. Comment noted.
44. Please refer to revised text which details our recommendation.
45. Comment noted.
46. RMA First Annual Report added to the bibliography.
47. Appendix D has been annotated as requested.