

PROJECT DESCRIPTION: The project was designed to create and institutionalize an applied research and demonstration capability in renewable energy development to contribute to national energy policy and planning. This objective is to be achieved via : (1) the building and equipping of a Center for Renewable Energy Development (CDER); (2) training of staff by resident and short-term AID-financed host country contract T.A. and U.S. and 3rd country participant training; (3) a pilot project component for building staff capabilities and

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| AUTHORIZATION DATE AND U.S. COP FUNDING AMOUNT April 22, 1980 \$9,200,000 | PES NUMBER 608-84-05 | PES DATE March 19, 1984 | PES TYPE <input checked="" type="checkbox"/> Regular <input type="checkbox"/> Other (Specify) |
| ABSTRACT PREPARED BY, DATE John Giusti, Evaluation Officer Dianne Tsitsos, Program Assistant March 29, 1984 | ABSTRACT CLEARED BY, DATE Robert C. Chase, Mission Director April 6, 1984 | | <input type="checkbox"/> Social <input type="checkbox"/> Terminal |

achieving a long-term objective of market penetration; and (4) a Small Projects Fund to promote the use of Renewable Energy Technologies (RET) in Morocco through funding private sector activity.

Reason for evaluation - This regularly scheduled evaluation was undertaken to determine the extent to which project objectives are being or can be met, given delays in GOM funding, start of building construction, and adequate staffing. An immediate decision on desirability of a full year's replenishment of the host country contract was a key reason for the evaluation. (As a result of the evaluation, sufficient funds were added to the contract to carry on activities through September 1984.)

Status - The evaluation found the project to be promising due to: evidence of GOM support in the form of 1983 budget approvals, under conditions of austerity and heavy cuts in the parent MEM budget; rapid progress on technical tasks over the 9 months since the T.A. team was fielded; strong CDER leadership and contract team support; availability of renewable resources in Morocco and applicable technologies for exploiting them. The status of individual elements is as follows:

- o CDER
 - staff - one-third of goal met
 - building - start of construction still delayed
 - lab equipment - procurement begun for installation in replacement laboratories
- o Pilot Projects
 - biomass project in operation
 - CP's met for disbursements for 3 of 5 solar/wind projects
 - remaining pilot projects can be completed within PACD
- o Small Projects Fund
 - several USAID decisions needed to meet CP for first disbursements

Key Findings - The evaluation team, however, predicated its view of the project's potential for success on timely MOF approval of CDER's 1984 budget and improved salary plan, since staffing needs for the new parastatal are critical and lack of staff was constraining training and other activities. Fundamental questions were raised about pilot projects selected, mainly because of market penetration issues. Delays in building construction were found to have delayed lab equipment procurement.

Lessons learned - (USAID remarks) 1) A Host Country Contract mode was not the best way to deliver T.A. to CDER, a new agency. Given the complexity of this project and the fact that CDER was an inexperienced institution, USAID would probably have been more helpful with a direct contract mechanism. 2) Project goals were overly ambitious and design not well suited to achieving them. Project assumptions were not realistic and are now being formally

CLASSIFICATION
PROJECT EVALUATION SUMMARY (PES) - PART I

Report Symbol U-447

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| 1. PROJECT TITLE RENEWABLE ENERGY PROJECT. | | | 2. PROJECT NUMBER 608-0159 | 3. MISSION/AID/W OFFICE USAID/MOROCCO |
| 4. EVALUATION NUMBER (Enter the number maintained by the reporting unit e.g., Country or AID/W Administrative Code, Fiscal Year, Serial No., beginning with No. 1 each FY) 84-03 | | | <input checked="" type="checkbox"/> REGULAR EVALUATION <input type="checkbox"/> SPECIAL EVALUATION | |
| 5. KEY PROJECT IMPLEMENTATION DATES A. First PRO-AG or Equivalent FY <u>80</u> B. Final Obligation Expected FY <u>85</u> C. Final Input Delivery FY <u>86</u> | | | 6. ESTIMATED PROJECT FUNDING A. Total \$ <u>14,750,000</u> B. U.S. \$ <u>9,200,000</u> | |
| 7. PERIOD COVERED BY EVALUATION From (month/yr.) <u>August, 1982</u> To (month/yr.) <u>September, 1983</u> Date of Evaluation Review <u>March, 1984</u> | | | | |

8. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR

| A. List decisions and/or unresolved issues; cite those items needing further study. (NOTE: Mission decisions which anticipate AID/W or regional office action should specify type of document, e.g., airgram, SPAR, PIO, which will present detailed request.) | B. NAME OF OFFICER RESPONSIBLE FOR ACTION | C. DATE ACTION TO BE COMPLETED |
|---|---|------------------------------------|
| 1. Re-evaluate pilot projects in light of market penetration potential and improve overall pilot project selection method. - USAID to issue letter on adequate economic monitoring of pilot projects already selected. - USAID to approve new pilot project selection criteria. | RTI/CDER OTP OTP | In process 4/84 9/84 |
| 2. Develop/Implement a long-term staffing plan. - USAID to make pending ProAG Amendment (Obligation \$1,000,000) contingent on receipt of plan.* | CDER/RTI | 5/84 6/84 |
| 3. Design a detailed training plan for CDER. | RTI/CDER | 6/84 |
| 4. Authorize improved salary structure for CDER. | Min. of Finance | 6/84 |
| 5. Extend PACD to 10/1/87 (Currently under study).* | CDER/USAID/ MOF/MEM | 9/84 |
| 6. Extend RTI contract to 10/1/86 (Currently under study).* | CDER/RTI | 9/84 |

*See Part II, Number 23 for further discussion.

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| 9. INVENTORY OF DOCUMENTS TO BE REVISED PER ABOVE DECISIONS <input type="checkbox"/> Project Paper <input checked="" type="checkbox"/> Implementation Plan e.g., CPI Network <input type="checkbox"/> Other (Specify) _____ <input type="checkbox"/> Financial Plan <input type="checkbox"/> PIO/T _____ <input type="checkbox"/> Logical Framework <input type="checkbox"/> PIO/C <input type="checkbox"/> Other (Specify) _____ <input checked="" type="checkbox"/> Project Agreement <input type="checkbox"/> PIO/P _____ | 10. ALTERNATIVE DECISIONS ON FUTURE OF PROJECT A. <input type="checkbox"/> Continue Project Without Change B. <input type="checkbox"/> Change Project Design and/or <input checked="" type="checkbox"/> Change Implementation Plan C. <input type="checkbox"/> Discontinue Project |
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| 11. PROJECT OFFICER AND HOST COUNTRY OR OTHER RANKING PARTICIPANTS AS APPROPRIATE (Names and Titles) OTP : Dianne Tsitsos, Project Officer <i>DT</i> OTP : Gary Bricker, OTP Chief <i>GB</i> PROG : John Giusti, Evaluation Officer <i>JG</i> | 12. Mission/AID/W Office Director Approval Signature: _____ Typed Name: Robert C. Chase Date: April 6, 1984 |
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PROJECT EVALUATION SUMMARY (PES)

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| 7. Allow RTI staff to assist CDER in any renewable energy activities, not just those financed by the project. | USAID | 5/84 |
| - USAID will send PIL agreeing with this in principle but clarifying advisory role of contractors. | | |
| 8. Cultivate technical and scientific collaboration between CDER and Moroccan universities and technical institutes. | CDER | In process |
| 9. Give first priority to provision of RTI technical assistance in Morocco, with U.S.-based effort by Moroccan staff a second choice and U.S. work by RTI personnel a last resort. | RTI | In process |
| 10. Small Projects Funds: | | |
| a. Count matching funds provided by businesses in lieu of GOM contribution. | USAID | Completed |
| b. Maximize local market procurement to extent possible. | CDER | Ongoing |
| c. Direct grants toward larger amounts and substantial businesses to reduce administrative burden. | CDER | 9/84 |
| 11. Accelerate equipment procurement (contingent on availability of adequate space and staff) | RTI/CDER | In process |
| 12. Transfer responsibility for procurement of some items currently to be bought by USAID to the RTI contract. | CDER/RTI/ USAID | 9/84 |
| 13. Introduce micro-computerized inventory procedures for equipment procured from all sources. | RTI | In process |
| 14. Improve communications between CDER/RTI and USAID. | CDER/RTI/ USAID | In process |
| 15. Provide short-term consultancies by advisers with experience in developing a renewable energy center. | RTI/CDER | As feasible |
| 16. Extend renewable energy technologies to other USAID projects. | USAID | As feasible |

P E S - Part II

13. Summary

This evaluation found that the project is a promising one due to the following factors: evidence of GOM support, in the form of 1983 budget approvals, under conditions of austerity and heavy cuts in the MEM budget; rapid progress on technical tasks over the nine months since T.A. team was fielded; abundance of renewable energy resources in Morocco, coupled with availability of applicable technologies for exploiting them; strong CDER leadership and contractor team support.

Nevertheless, the evaluation team was forced to predicate its view of the project's potential for success on MCF approval of CDER's 1984 operating budget and improved salary plan, still pending as of 3/14/84, since staffing needs for the new parastatal are critical. The team also flagged needs for development of staffing and training plans, strategic plans, and updated procurement plans reflecting the realities imposed by delays in building construction. The team spent considerable time in working with CDER and RTI to refine suggestions on this latter issue. They also raised fundamental questions about the pilot projects selected for implementation, based mainly on market penetration issues, and suggested a different method for selecting future pilot projects. The team additionally made recommendations for changes in USAID positions vis-à-vis the Small Projects Fund in order to enhance the potential for commercialization.

14. Evaluation Methodology

This was an annual evaluation scheduled slightly earlier than planned in order to address questions raised about the advisability of replenishing the host country contract for a full twelve months.

The team consisted of James W. Howe, former International Division Manager of the Solar Energy Research Institute (SERI), Team Leader; Terence J. Hart, current resident renewable energy adviser to the Laboratoire de l'Energie Solaire in Mali; and Kennell J. Touryan, former Deputy Director of SERI.

Prior to departure, the team interviewed AID/W officials and contractor personnel at RTI/NC. In-country, the team interviewed CDER officials and staff, contractor staff, pertinent officials of the Ministry of Energy and Mines and Ministry of Finance, representatives of other agencies such as Office National de l'Electricité (ONE) and SOCOCHARBO, and USAID staff. USAID files and CDER documents were other sources of information.

15. External Factors

The current fiscal crisis in Morocco and resultant conditions of austerity have affected all GOM agencies, but the effects on CDER are particularly pernicious since it is a new agency just beginning to staff

16. Inputs

The team recommended improved English language training and selection of more appropriate short-term technical training than that provided by the University of Florida.

17. Outputs

1. CDER:

- staff - one-third of staffing goal has been met;
- building - start of construction still delayed;
- lab-equipment - procurement begun for installation in replacement lab sites.

2. Pilot Project Program:

- biomass project in operation;
- CP's met for beginning equipment procurement on 3 of 5 solar/wind projects;
- remaining solar/wind and micro hydro projects have been delayed due to difficulties in obtaining needed data. (Evaluation team found no reasons to think projects could not be realised within project time frame).

18. Purpose

The project was designed to create and institutionalize an applied research and demonstration capability in renewable energy which will contribute to national energy policy and planning.

Progress toward EOPS has been delayed (see item 17) due to many factors on both the GOM and AID sides but also due to unrealistic timing envisioned in Project Paper. This schedule is currently being revised.

19. Goal/Subgoal

The project goal was to reduce dependence on imported fuels by making maximum use of the country's renewable resources for the production of usable energy while at the same time preserving these resources from environmental degradation.

Evaluation team did not deal with this item and, in fact, the project as designed is probably inadequate for the hypothesized impact. In any case, measuring progress toward the goal will probably not be possible, and such measurement is clearly beyond the scope and resources of the project.

20. Beneficiaries

Projects Fund activities will benefit private entrepreneurs directly and a wide range of potential energy consumers indirectly by virtue of their impact on diffusion of renewable technologies.

21. Unplanned Effects

None so far.

22. Lessons Learned

Although the evaluation team did not deal directly with this item, some lessons emerged during the evaluation process:

1. The host country contract mechanism is a partial explanation for communication problems among the three parties involved. Although the evaluation team found close and productive working relationships between CDER and its contractor, USAID's role via ~~the~~ the contractor and CDER has not always been clear. In retrospect, expecting the director of a newly-created agency to act as contracting officer for U.S.-based technical experts while simultaneously fighting the inevitable domestic battles for scarce resources and recognition was unrealistic. USAID could probably have been more helpful with a direct contract mechanism.
2. Project design and goals were overly ambitious given what was known about GOM capabilities even at the time the project was planned.

Given the complexity and innovative nature of the project, both technically and managerially, in addition to the expected institutional problems and delays associated with creating a new governmental institution, the project delays should hardly be surprising.

23. Special Comments or Remarks

Subsequent to the evaluation, a performance audit of the project was conducted in February 1984 by RIG/A, Nairobi. The audit findings are generally consistent with the issues raised in the evaluation report. Two of the more important audit issues focused on (1) procedures for determining GOM's contribution to the project and (2) substantial delays in project implementation, particularly with respect to building construction, equipment procurement, and staffing. Appropriate actions have already been or are being taken to comply with the audit recommendations.

Relevant to the issues raised in both the evaluation and audit reports is the Mission's planned obligation of an additional \$1,000,000 for this project in June 1984. USAID/Nairobi has conveyed to CDER that this obligation will be contingent upon two actions to be taken by CDER

Given the delays encountered in project implementation, it would appear that extension of the PACD and the RTI contract (PES Recommendations No. 5 and 6) will be required in order to achieve the goals of the project. The major criterion for extension will be the degree of project progress between now and September (the month by which a decision must be made on the contract extension). Evidence of progress which will be reviewed includes approval and availability of FY 1984 budget; firm decision on construction of a CDER facility (or acquisition of a suitable alternative); recruitment of 2 or 3 additional professional staff; preparation of an adequate training plan; meeting CP requirements for Small Projects Fund; and the development of an economic data monitoring system for pilot projects. If there is sufficient evidence of progress by June, 1984, then the PACD will be extended in the pending ProAg; and the contract will be amended by September.