

UNCLASSIFIED

INTERNATIONAL DEVELOPMENT COOPERATION AGENCY :

AGENCY FOR INTERNATIONAL DEVELOPMENT

WASHINGTON, D.C. 20523

PROJECT PAPER  
SUPPLEMENT

MOROCCO: Conventional Energy Management  
and Training (608-0176)

September 7, 1986

UNCLASSIFIED

CONVENTIONAL ENERGY MANAGEMENT AND TRAINING  
(608-0176)

PROJECT PAPER SUPPLEMENT

USAID/MOROCCO

September, 1986

PROJECT DATA SHEET

1. TRANSACTION CODE

C A = Add  
C = Change  
D = Delete

Amendment Number  
1

DOCUMENT CODE  
3

2. COUNTRY/ENTITY  
Morocco

3. PROJECT NUMBER

608-0176

4. BUREAU/OFFICE

USAID/Morocco

5. PROJECT TITLE (maximum 40 characters)

Conventional Energy Mgmt. and Trng.

6. PROJECT ASSISTANCE COMPLETION DATE (PACD)

MM DD YY  
06 30 88

7. ESTIMATED DATE OF OBLIGATION  
(Under "B" below, enter 1, 2, 3, or 4)

A. Initial FY  84 B. Quarter  3 C. Final FY  84

8. COSTS (\$000 OR EQUIVALENT \$1 = )

A. FUNDING SOURCE	FIRST FY			LIFE OF PROJECT		
	B. FX	C. I/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total						
(Grant)	( )	( )	( )	( 3,900 )	( 100 )	( 4,000 )
(Loan)	( )	( )	( )	( )	( )	( )
Other U.S.						
1.						
2.						
Host Country				76	1,404	1,480
Other Donor(s)						
<b>TOTALS</b>				3,976	1,504	5,480

9. SCHEDULE OF AID FUNDING (\$000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECIL CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1) ES	B743	878		4,000	0	0	0	4,000	0
(2)									
(3)									
(4)									
<b>TOTALS</b>				4,000	0	0	0	4,000	0

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each)

872 840 876

11. SECONDARY PURPOSE CODE

780

12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)

A. Code TNG

B. Amount

13. PROJECT PURPOSE (maximum 480 characters)

To strengthen the internal capabilities of the National Petroleum Exploration and Development Agency (ONAREP) to attract private investment and joint venture partners to explore, develop, and produce petroleum resources in Morocco.

14. SCHEDULED EVALUATIONS

Interim MM YY MM YY Final MM YY  
03 86 11 87

15. SOURCE/ORIGIN OF GOODS AND SERVICES

000  941  Local  Other (Specify)

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a page PP Amendment)

Revised project purpose focuses on helping ONAREP attract private sector investment to Morocco to explore, develop, and produce petroleum resources. LOP funding decreased from \$5.0 Million to \$4.0 Million. PACD remains unchanged. Technical Assistance and training under the project adjusted to address refocus of project purpose.

APPROVED BY

Signature Charles W. Johnson

Title Director  
USAID/Morocco

Date Signed

MM DD YY  
07 07 86

18. DATE DOCUMENT RECEIVED IN AIDAV, OR FOR AIDAV DOCUMENTS, DATE OF DISTRIBUTION

MM DD YY

LIST OF PROJECT AND MISSION REVIEW COMMITTEE MEMBERS

USAID Project Committee Members

Robert Kahn, Project Manager, ENR  
W. Stacy Rhodes, Program Officer  
Pamela Callen, Budget and Fiscal Officer  
Randal Thompson, Project Development Officer

ONAREP Contributors

Mohamed Douieb, Director General  
Mohamed Benjelloun, Chief Division of Human Resources  
Almoundir Morabet, Assistant Chief of Exploration Division

USAID Mission Review Committee

Charles W. Johnson, Director  
Stephen Klein, Office Chief, ENR  
John Giusti, Program Officer  
James T. Smith, Program Economist  
Ernest Hardy, Controller  
Robert Meighan, Regional Legal Advisor  
James Anderson, Regional Contracting Officer

Conventional Energy Management and Training  
Project Paper Supplement (608-0176)

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ACTION MEMORANDUM FOR THE USAID/MOROCCO DIRECTOR

September 4, 1986

FROM: John Giusti, Program Officer *JG*

SUBJECT: Conventional Energy Management and Training Project  
(608-0176) -- Project Paper Supplement

REF: RABAT 7481

PROBLEM: Approval of the Project Paper Supplement for the Conventional Energy Management and Training Project (608-0176)

DISCUSSION: The Conventional Energy Management and Training Project (608-0176) is a four year project for which AID originally intended to contribute up to \$5,000,000 for the provision of technical assistance, training, and commodities to build the internal capabilities of the National Petroleum Exploration and Development Agency (ONAREP) (1) to apply cost-effective private sector management principles and techniques; (2) to strengthen its ties to potential private sector partners in petroleum activities and investments; and (3) to explore, develop, and produce hydrocarbon resources. The obligation of \$4,000,000 in May 1984, was intended to be the first of two or more increments to be granted by AID.

The interim evaluation of the project, completed in June 1986, recommended that the project purpose be narrowed to focus on the exploration and promotion aspects of the project as a necessary step to attracting private investment and joint venture partners to Morocco. The Mission Review Committee concluded that a project paper supplement should be prepared to narrow the project purpose and funded activities along these general lines.

As a result of the proposed modifications, no additional funds are required beyond those of the original obligation of \$4,000,000.

Current Project: Project activities currently consist of long and short-term technical assistance, long and short-term training, and commodity support. Six long-term technical advisors are presently in country: a senior planner, a reservoir engineer (chief-of-party), a regional geologist, a geophysicist, a surface facilities engineer, and a joint venture promotions specialist. Short-term consultancies assisted ONAREP in the areas of human resource management, internal audit, inventory control, and surface facility engineering. Twenty-six ONAREP employees have received academic and/or technical training in the U.S. Eighty-eight employees attended five technical seminars in Morocco and 149 participate in regular or intensive English language training through the American Language Center in Rabat. The bulk of commodities and materials to be provided to ONAREP under the project, principally computer equipment/software, office equipment, and technical books, have already been procured.

Summary of Refocused Project: The original purpose of the Conventional Energy Management and Training Project was to strengthen ONAREP's management procedures and techniques across a relatively broad spectrum of planning, exploration, promotion, production, and reservoir technology activities. As of this PP Supplement, the refocused project purpose is to strengthen ONAREP's internal capabilities to attract private investment and joint venture partners to explore, develop, and produce petroleum resources in Morocco. For the remainder of the project, technical assistance and training will be centered mainly around exploration and promotion activities under the assumption that the generation and promotion of "saleable" exploration prospects can be effective in helping attract private sector investment to Morocco.

Under the modified project, a total of 181 person months of long-term technical assistance and 56 person months of combined short-term consultancies to Morocco and U.S.-based technical support (versus 174 person months long-term and 88 person months short-term originally planned) will be provided to ONAREP. The configuration of the long-term technical assistance will change to reflect the revised focus of the project to include a joint venture promotion advisor, three explorationists, and a surface facility engineer. One Masters Degree candidate and approximately 55.5 participant months of short-term training (short courses, internships, seminars, and conferences) in the United States will be provided. This net decrease in the amount of training to be provided (the original project envisioned four Masters Degrees and 88 participant months of short-term training) is in recognition of ONAREP's limited capability to field qualified candidates and the relative abundance of training opportunities already made available to ONAREP through its concessionary arrangements with joint venture partners. On the other hand, ONAREP employees enrolled in English language classes and participants in technical seminars in Morocco exceed the original project targets.

Commodity acquisitions for the remainder of the project will be limited to the modest acquisition of technical materials and books in conjunction with the refocused project purpose.

The Mission has informed AID/W of the proposed redesign of the project and the preparation of a PP Supplement (Rabat 7481). No Congressional Notification is required as no Life-of-Project (LOP) or FY 1986 funding increase is contemplated and the purpose/scope of the activity is not substantially different from that previously justified to Congress. A Project Authorization is not required since both the funding levels and the revised purpose are within the original Project Authorization.

You are authorized to amend this project (608-0176) under Section 2 of Redefinition of Authority No. 113.3A.

RECOMMENDATION: That you sign the amended Project Paper Supplement face sheet (Project Data Sheet) thereby amending the Conventional Energy Management and Training Project. The Project Agreement with the GOM will be amended to revise the Project Description, Annex I, accordingly.

Conventional Energy Management and Training (608-0176)  
Project Paper Supplement

I. Introduction:

The interim evaluation of the Conventional Energy Management and Training Project (608-0176) was completed in June 1986 upon review of the evaluation report prepared by TEM (Technology Economics Management) Associates, Inc. The Mission Review Committee concluded that a project paper supplement should be prepared to modify the project description (purpose, inputs, outputs) in light of greatly changed circumstances since the project's conception. The PP Supplement was to narrow the focus of the project purpose and funded activities for the duration of the project.

The original purpose of the project was to help develop the institutional capabilities of The National Petroleum Exploration and Development Office (ONAREP) to manage what appeared to be the imminent development of a producing oil and gas field in the Essaouira Basin (Meskala), and to promote interest on the part of the international oil community expected to result from this demonstrated new production in Morocco. The original assumptions considered to be critical to the success of the project were (1) the existence of commercial reserves in Morocco and (2) no major rises or drops in the world oil price. A third major assumption, that prices can be negotiated to allow conversion to domestic fuels, was dependent on the other two.

The limited extent now identified of the Meskala reserves has greatly changed the complexion of oil and gas development activity in Morocco. This, combined with significantly lower international oil prices, has resulted in a search for new directions within ONAREP, and a refocus of the USAID technical assistance effort based on new assumptions.

Interest in Moroccan oil and gas exploration by the oil companies has not completely evaporated in spite of the recent drop in oil prices. Five new concessions were granted in 1984 by ONAREP, and by early 1985, valid oil exploration concessions (7 offshore and 9 onshore) covered 59,776 sq km with companies such as AMOCO, North-South Resources, SCP, and Esso. More recently exploration concessions have been granted to Pennzoil, and BHP of Australia. ONAREP's promotional visit to the U.S. in February/March 1986 indicated a level of continuing interest in exploration of Morocco on the part of the international oil community, and resulted in follow-up visits to Morocco by two of the ten companies contacted and requests for further information by others.

II. Assumptions:

The assumptions under which the project will now operate are as follows:

1. Commercial petroleum reserves are in place in Morocco (e.g. Meskala) and others can be located that upon development will increase the country's domestically produced contribution to the national energy supply.

2. The Government of Morocco (GOM), and ONAREP in particular, does not have the resources to explore for and develop these reserves on its own account.
3. Petroleum companies will continue their international exploration activities, albeit at reduced levels.
4. The key to petroleum exploration and development in Morocco lies in attracting private sector investment through the generation of "saleable" prospects.

Similarly, despite the disappointment of Meskala and changes in current oil prices, it is assumed that Morocco will still need a strong core of well-trained people to coordinate with the private sector and respond to whatever level of exploration and development activity the country is able to generate in cooperation with the international oil companies.

### III. Purpose:

The original project purpose was "to build the internal capability of ONAREP to: (1) apply cost-effective private sector management principles and techniques, (2) strengthen its ties to potential private sector partners in petroleum activities and investments, and (3) explore, develop, and produce petroleum resources." In the refocused effort, the emphasis is placed on the second of these viewed in conjunction with the third. The private sector is viewed as the principal mechanism for continued exploration and production after a petroleum resource base has been proven. The revised project purpose therefore is as follows:

Purpose: The purpose of the project is to strengthen the internal capabilities of the National Petroleum Exploration and Development Office (ONAREP) to attract private investment and joint venture partners to explore, develop, and produce petroleum resources in Morocco.

The TEM Associates evaluation report concluded that institutional development takes place most effectively when linked directly to specific high visibility projects within ONAREP. For the remainder of the project, the USAID technical assistance effort will follow this recommendation as it applies to ONAREP's exploration activities and prospect generation. Subsequent project activities will focus on helping ONAREP prepare and present to potential oil industry partners highly developed exploration and promotion reports.

### IV. End of Project Status (EOPS)

The Conventional Energy Management and Training project includes a technical assistance effort whose emphasis is now being changed. At the end of the project, the original design will be seen to have been an effort to strengthen ONAREP's management procedures and techniques across a relatively broad spectrum of planning, exploration, promotion, production, and reservoir technology activities. As of this PP Supplement the revised purpose of the project is a concentration on strengthening the internal capabilities of ONAREP to attract private investment and joint venture partners to Morocco.

At the end of the project ONAREP will be better able to promote Morocco's potential oil and gas reserves through the use of improved data gathering and analyses techniques, improved reporting and presentation procedures, and through having identified more and better "saleable" prospects for promotion. These benefits will be reinforced by training of the mid-level and senior staff in petroleum exploration and promotion.

In the current world oil environment, ONAREP will do well to "put its best foot forward" in attracting joint venture partners and private sector investment to explore and develop petroleum resources in Morocco. Under prevailing industry conditions, companies are increasingly selective in entering into exploration agreements. For Morocco to have a reasonable chance to enter the competitive world exploration market, developing quality geological/geophysical data and presenting this data to potential investors in new and convincing ways is critical. If even one of the prospects identified by the end of the project leads to increased domestic production, it would undoubtedly help alleviate Morocco's economic problems caused, in part, by a high oil import bill.

Morocco can help itself by adapting measures that will make attracting joint venture partners and foreign investment more likely. Whereas these measures would provide no guarantee that economically viable reserves can be discovered, they can go a long way in helping Morocco receive full consideration by oil companies seeking exploration opportunities. For example, ONAREP should continue to encourage the early passage of the New Petroleum Law now being considered by the Moroccan Parliament. This long awaited law is considered important to many U.S. and other foreign oil companies and its passage would help diminish uncertainties regarding the current negotiation parameters for oil exploration concessions in Morocco.

In addition, as part of the amended project agreement, ONAREP will be encouraged to take the following measures:

- 1) Provide a clear definition of promotion objectives so that areas designated for promotion are not also considered for in-house drilling by ONAREP.
- 2) Provide more support staff for the technical assistance (TA) contract explorationist and promotion advisors. Too much time is now spent on support tasks (ie. drafting, map making, and secretarial work) by the TA contract advisors that could be spent on interpretation of data, training, and report preparation. Additional ONAREP support personnel should be assigned to assist the TA contract advisors.
- 3) Provide more junior level counterparts to work with the technical assistance advisors with clearly identified training objectives. Whereas it is not expected that junior level geologists, for example, will become seasoned explorationists by the end of the project, the obvious opportunity for on-the-job training from experienced oil industry personnel should be encouraged.

## V. Project Outputs

To appreciate fully the anticipated project outputs, it must be emphasized that the project can not assure a petroleum discovery in Morocco or that the production of new energy resources in Morocco will result from it. The project can still be expected, however, to help accelerate the progress of the relatively modest Meskala gas gathering and separation facility, now under construction.

Project outputs in the managerial and planning aspects of the project have already succeeded in helping ONAREP re-orient its operations and procedures to conform more to accepted oil industry standards. Accomplishments in these areas include:

1. The establishment of a Human Resource Management System;
2. The development of an Internal Audit program and operating procedures for its implementation;
3. An in-depth assessment of ONAREP's Inventory Classification System; and
4. An assessment and trend analysis of ONAREP's geophysical and drilling work and the establishment of a quarterly reporting system (plan vs. budget) designed to help improve senior management decision making.

In the area of reservoir and production technology, project outputs to date include:

1. The establishment within ONAREP of its own reserves estimating service including the acquisition of the necessary computer programs;
2. Discrete reservoir studies which narrowed down the range of reserve estimates of the Meskala, Toukimt, Zelten and N'Dark gas fields in the Essaouira Basin and in two small discoveries in the Charb region;
3. The development of guidelines for cost-effective procedures in well testing;
4. The preparation of the conceptual design for the Meskala gas gathering and separating facilities and the request-for-bids for the facilities' construction;
5. Contract preparation and construction supervision for the extension of an existing pipe-line system to supply gas to new customers;
6. The preparation of the conceptual design and project scope of work for the development of the Oulad Youssef field; and
7. The identification and use of different engineering tools for normal department and plant operation, including computer simulations, vendor contracts, reference books, and indexed file systems.

Project outputs in the area of joint venture promotions include:

1. The identification and assessment of the current and future interest of multi-national oil companies;
2. The preparation of written technical promotion reports produced from basic drafts prepared by sector division personnel. (Some of these areas are Tadla, Hauts Plateaux, Essaouira, Aknoul, Pre-Rif and Sais, Agadir-Sous, Tarfaya, Beni Znassen, Safi-Kenitra, and the South Atlas Basins);
3. The preparation and delivery by the Joint Venture Promotions advisor and the staff of the Promotions Division of periodic formal presentations to oil industry representatives; and
4. The coordination of ONAREP's promotion visits abroad and of foreign oil company visits to ONAREP's offices, including assisting them in the collection, review, and reproduction of data to be transmitted to their company home offices.

Project outputs in the area of exploration include:

1. Monitoring of the acquisition and processing of the 1985 Aknoul and Sais seismic survey, interpretation of the seismic and preparation of the exploration report;
2. The design of regional seismic surveys to be run in 1986, following leads identified in 1985;
3. The identification of potentially drillable play concepts in the pre-Rif area;
4. The identification of quality deficiencies in the acquisition and processing of seismic data;
5. A review of the seismic data of Tissa-Taza, Aknoul, Karait Ba Mohamed, and Sais;
6. The preparation of a two-year program for a methodical, detailed study of the Secteur Nord to generate promotion reports and drilling prospects.

For the remainder of the project, the outputs will be centered mainly around exploration and promotion activities and will include the following:

1. Modern geological and geophysical techniques and procedures in use by personnel in ONAREP's Explorations Division to gather and analyze data;
2. Three to six in-depth quality exploration reports prepared in areas of project concentration;
3. Four to eight new or improved technical promotion reports, covering selected regions designated for promotion, prepared and presented to potential partners;

4. Procedures in place for the formalized internal peer review of technical reports prepared by ONAREP explorationist;
5. Exploration and promotion activities further integrated within ONAREP's organizational structure; and
6. Procedures in place to conduct geological and economic risk analysis for prospects generated from exploration reports.

#### VI. Project Inputs:

The TEM Associates evaluation report concluded that data-gathering techniques and technical reports produced by ONAREP may be inadequate. The report suggested that the existing ONAREP data on Meskala and other areas has not been fully interpreted and is not complete enough to be used for in-depth promotional efforts. This finding is confirmed by the project's prime contractor Williams Brothers Engineering Company (WBEC). Not only does ONAREP need to improve its presentations to potential partners, it also must seek out new companies and be prepared to show companies already familiar with Morocco something new.

The USAID funded technical assistance effort for the duration of the project will help refine ONAREP's skills in data gathering, reporting and presentation. To accomplish this, four resident technical advisors (one joint venture promotions specialists and three explorationists) will be maintained in the promotion and exploration divisions. These advisors (three of whom are currently on the job) will work in close collaboration with each other and with their ONAREP counterparts to:

- (1) advise ONAREP on state-of-the-art geologic and geophysical techniques and procedures,
- (2) work with senior and junior level counterparts to gather and to interpret data and to prepare in-depth exploration reports,
- (3) participate in the internal peer review of technical reports prepared by other ONAREP explorationists,
- (4) assist in formalizing an integration of exploration and promotion activities within ONAREP,
- (5) assist ONAREP in institutionalizing geological and economic risk analysis for all prospects generated from exploration reports,
- (6) provide on-the-job training with formalized training objectives for junior level counterparts,
- (7) provide oversight for contract seismic work, and
- (8) advise on the institutional and structural improvements to be made to help ONAREP achieve its goal of improved data gathering and reporting techniques.

The resident advisory team will work, together with their counterparts, to develop good quality promotional packages covering selected regions designated for private sector promotion. ONAREP will support this effort by placing technical backstop personnel at the disposal of the advisory team, namely map makers, draftsmen, and secretaries.

In addition to assisting ONAREP in the preparation of three to six in-depth quality exploration reports and four to eight new or improved technical promotion reports through 1987, the resident advisors will document the methodology by which the presentation packages are developed, and through on-the-job training, leave ONAREP with a state-of-the-art model of the process by which such packages may be developed in the future.

#### A. U.S. Contribution

USAID will support the project with up to \$4.0 million in the form of technical assistance, training, and commodities.

##### 1. Technical Assistance

Experience has shown that assistance in some aspects of the highly-technical hydrocarbons field can most effectively be given through the efforts of full-time resident personnel. U.S. advisors working on a daily basis with their Moroccan counterparts to generate and promote "saleable" prospects can be effective in helping attract private sector investment for petroleum exploration and development in Morocco. The technical assistance provided under the project falls into the following general categories:

##### a. Managerial and Planning

The original project foresaw a key role for a senior level long-term advisor to provide managerial and planning advice to ONAREP's senior management. The achievements of this advisor to date include: a) insuring that the substance of the five-year development plan, developed by the preceding USAID funded technical assistance team, corresponds to ONAREP's technical and financial capability; and b) promoting the planning process as a means of coordination of the various activities of ONAREP.

In refocusing the project to emphasize exploration and promotion activities, the senior management and planning advisor position is no longer considered by ONAREP or USAID to be critical to the overall effectiveness of the TA effort and will be eliminated. Petroleum management and planning advice as it relates to improving ONAREP's exploration and promotion capability, will be provided through short-term advisors, on a case-by-case basis, for the remainder of the project.

b. Joint Venture Promotions

The technical assistance provided by the resident Joint Venture Promotion Specialist (JVPS) has assisted ONAREP's top management levels as well as its Division of Promotion and Negotiation to attract oil companies to participate in oil and gas exploration and production in Morocco. The JVPS is responsible for assisting ONAREP in initiating and maintaining contact with key exploration and production decision-makers in the numerous companies which comprise the world oil industry. ONAREP has requested a one year's extension of the JVPS' contract and since this is directly in line with the refocused purpose of the project, USAID has agreed to provide it.

c. Exploration

Strengthening ONAREP's internal capability to produce in-depth exploration reports leading to the identification of "saleable" prospects is crucial to the goal of attracting private sector partners to invest in exploration and development of potential hydrocarbon resources in Morocco. ONAREP has requested additional support in exploration in conjunction with the refocused project effort. USAID has agreed to increase by one the number of resident explorationist advisors (bringing to a total of three) as part of the technical assistance effort. The third explorationist will be recruited for a one year period of service in Morocco.

d. Reservoir Engineering

When the project was originally conceived, it was thought that the Meskala gas discovery would prove to be large and that a considerable amount of reservoir engineering work would be needed. However, the discovery proved to be much smaller than hoped. The Reservoir Engineer resident advisor and his ONAREP colleagues found time in the first 18 months of the project to complete most of the technical reservoir analysis work on Meskala that needed to be done. Consequently, the technical duties of the incumbent reservoir engineer resident advisor diminished substantially. ONAREP has determined that due to the paucity of currently known reserves in Morocco, the continued services of a resident advisor specializing in reservoir engineering is no longer warranted. USAID agrees.

e. Surface Facilities

The Surface Facilities Engineer resident advisory position was also conceived as one which would become engaged in a much larger activity over time. Nonetheless, although expectations have been reduced, work on the Meskala gas separation facility is now underway and is scheduled for completion in mid-1987. The incumbent resident advisor, who worked on the conceptual design of the gas gathering and separating facilities, and on the request for proposals for the facilities construction, is scheduled to be in Morocco during most of the construction phase. ONAREP has requested that he remain until the plant goes on stream and is operating satisfactorily. The

evaluation team found this advisable and recommended he be extended by six months to accomplish this specific function. Although these efforts are not integrated with the revised project purpose, the work of the resident advisor continues to be highly useful and his input to ONAREP's overall operation has been highly rated. At ONAREP's request, the evaluation team's recommendation for a short extension of his contract has been accepted by USAID.

#### f. Short-Term Consultant Specialists

Short-term consultants have provided valuable technical assistance to date in the areas of human resources management, internal audit and methods, inventory control, and surface facility engineering. Additional short-term consultancies for the duration of the project will include approximately six months of service from a construction engineering supervisor to work on the Meskala gas project and approximately two person months of short-term consultant work primarily in the areas of exploration and promotion. Determination and selection of the additional short-term consultancies will be on a case-by-case basis for the remainder of the project.

#### g. Home Office Support

The field personnel have been supported in the Home Office by a part-time Project Director working 25% of his time on project management. The Project Director, with technical guidance from the resident Chief-of-Party, has selected short-term consultants and orchestrated the Home Office technical support in several areas, primarily production engineering. The Project Director has also managed much of the Project's participant training program. Another key service under the control of the Home Office has been for computer time and the selection of appropriate reservoir estimation software.

Within the framework of the refocused project, Home Office support will remain fairly constant particularly in backstopping the implementation of the remainder of the 1986 training program and meeting project staffing requirements. Additional Home Office technical support for the remainder of the project, for a total of approximately four person months will assure adequate project backstopping, particularly on the Meskala project and in exploration and promotion activities.

## 2. Training

Chronic Moroccan shortages of qualified petroleum professionals require an organized effort to:

- project manpower demand and develop adequate recruitment procedures and training budgets to fill vacancies within ONAREP;
- maintain and expand the skills of current experienced petroleum professionals; and
- provide practical and immediately useful job skills to newly graduated petroleum professionals and technicians.

The training component of the project contributes to the development of a long-term capability in ONAREP to explore, develop and produce oil and gas resources in partnership with the private sector. The project emphasizes specialized, highly practical short-term and on-the-job training. ONAREP, with project support, has devoted substantial effort to a comprehensive assessment of its future manpower needs and to the development of a comprehensive long-term training plan, with priority rankings, schedules and budgets designed to respond to the assessment's specific findings. In the framework of the refocused project, particular emphasis on training of qualified petroleum exploration and promotion professionals will comprise the highest priority group.

The general categories of manpower training included under the project are: academic training, short courses, industry internships, conferences, seminars in Morocco, and English language training. To date, one ONAREP geologist is currently enrolled in a Masters program in the United States. Ten ONAREP employees have participated in short courses in the United States and three in internships (for a total of 24.5 participant months). Twelve employees attended seminars and conferences (for a total of 4.0 participant months). Five seminars were given in Morocco, and attended by 88 employees (for a total of 27 participant months). Regular English language courses were opened to a large number of ONAREP employees (130 enrolled) working either as counterparts to the technical assistance team members or having contact with foreign oil company representatives. Intensive English language training is made available to those who expect to receive training in the U.S. and, to date, 19 employees have been enrolled in these courses.

ONAREP has identified two major constraints in optimizing the training opportunities offered thus far under the project: 1) a shortage of qualified candidates, particularly those with the requisite level of English language skills, and 2) difficulty in releasing key professional staff members for lengthy training for want of suitable replacement staff in the near term.

The project training contractor, Institute for International Education (IIE), has suggested changes in the current overall approach to training under the project and has offered to assist in organizing internships for ONAREP employees. Provided qualified candidates can be identified, the 1987 Training program under the revised project will be developed by USAID in conjunction with IIE. Given ONAREP's difficulty in releasing key staff members for lengthy training, however, no further academic training is planned under the redesigned project.

Assuming that sufficient progress in attaining the necessary English language skills is achieved, an estimated 27 participant months of technical training can be expected for the remainder of the project, broken down as follows: 4 internships for roughly 12 participants months, 4 short course participants for roughly 12 participants months, and 6 seminar/conference participants for about 3 participant months. ONAREP employees will have received about 157.5 participant months of training (24 academic, 28.5 technical, and 105 English language) under the project by the end of fiscal year 1986, and a total of about 184.5 participant months of training by the end of the project.

### 3. Commodities

Project funded commodities purchased to date, including office equipment, furniture, and appliances for the technical assistance advisors, microcomputer equipment and accessories (three PCs), computer software, and technical books total approximately \$140,000. Additional commodities valued at approximately \$30,000 will be considered for purchase during the remainder of the project.

### B. GOM Contribution

ONAREP will support the project with the equivalent of approximately \$1.5 million largely in the form of counterpart personnel and support services.

#### 1. Counterpart personnel

- Senior level counterparts for each Resident Advisor.
- Minimum of one junior level counterpart for each advisor.

#### 2. Project Support

- Six (6) cars, one for each resident advisor, including maintenance.
- Office space and equipment at ONAREP.
- Draftsman, map making, and secretarial support for resident advisors.
- International air travel for ONAREP participants.

### VII. Revised Cost Estimates

Tables A and B summarize USG and GOM cost estimates respectively. The tables include estimated (actual) expenditures through June 30, 1986, and proposed (budgeted) costs through the PACD of June 30, 1988.

TABLE A

Conventional Energy Management and Training  
608-0176  
USAID Expenditures  
Summary  
(\$000)

<u>Category</u>	<u>Actual</u> May 1984 to June 1986	<u>Estimate</u> FY 84 - FY 86 (Cum. Total)	<u>Estimate</u> FY 87	<u>Estimate</u> FY 88	<u>Total</u> FY 85 - FY 88 Cumulative
1. Short-term training Direct AID funding	146	166	20	15	201
2. Academic Training Direct AID Funding	24	36	10	-	46
3. Project Evaluation and Monitoring	31	31	-	40	71
4. Contingency	17	17	7	6	30
5. Short-term Training via Technical Assistance Contractor	143	170	40	-	210
6. Commodities Direct AID Funding	15	15	-	-	15
7. Technical Assistance	1,778	2,105	1,088	234	3,427
<b>TOTAL</b>	<b>2,154</b>	<b>2,540</b>	<b>1,165</b>	<b>295</b>	<b>4,000</b>

TABLE B

Conventional Energy Management and Training  
608-0176

GOM Expenditures Summary  
(estimates in 000 Dh's)

Exchange Rate: 8.9 Dh = \$ 1.00

	<u>I</u> <u>Estimate</u> <u>CY 1984-1986</u>	<u>II</u> <u>Estimate</u> <u>CY 1987</u>	<u>III</u> <u>Estimate</u> <u>CY 1988</u>	<u>Estimated</u> <u>total</u> <u>CY 1984-1988</u>
Short-term training (Salary maintenance)	572	208	0	780
Academic Training (Salary maintenance)	250	0	0	250
Project Evaluation and Monitoring (counterparts)	422	170	84	676
International Travel	164	76	0	240
Short term Technical Assistance (Counterparts)	1,319	208	0	1,527
Commodities (cars)	404	0	0	404
Long terms Technical Assistance (Counterparts/office space/furniture)	<u>6,370</u>	<u>2,927</u>	<u>0</u>	<u>9,297</u>
Total	9,501	3,589	84	13,174

PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Life of Project:  
From FY 84 to FY 88  
Total U.S. Funding \$4.0 Million  
Date Prepared: 2/13/86

Project Title &amp; Number: Conventional Energy Management and Training (608-0176)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p><b>Program or Sector Goal:</b> The broader objective to which this project contributes.</p> <ul style="list-style-type: none"> <li>-- Alleviate economic problems/balance of payments deficit resulting in part from a high oil import bill.</li> <li>-- Provide greater domestic contribution to energy resource mix.</li> </ul>	<p><b>Measure of Goal Achievement:</b></p> <ul style="list-style-type: none"> <li>-- Balance of payment account.</li> <li>-- Partial displacement of imported fuels with local fuels.</li> </ul>	<ul style="list-style-type: none"> <li>-- Opinion of experienced petroleum consultants.</li> <li>-- Exploration, appraisal drilling results.</li> <li>-- Public record.</li> </ul>	<p><b>Assumptions for achieving goal targets:</b></p> <ul style="list-style-type: none"> <li>-- Commercial reserve can be located in Morocco.</li> <li>-- Petroleum companies continue exploration activities.</li> </ul>
<p><b>Project Purpose:</b></p> <p>To strengthen the capabilities of ONAREP to attract private investment and joint venture partners to explore, develop, and produce petroleum resources in Morocco.</p>	<p><b>Conditions that will indicate purpose has been achieved: End of project status.</b></p> <ul style="list-style-type: none"> <li>-- Increased private sector petroleum investment in Morocco.</li> <li>-- Joint venture partners attracted to Morocco (1-3 new concessions signed).</li> </ul>	<ul style="list-style-type: none"> <li>-- ONAREP annual report.</li> <li>-- Discussions with major donors (IBRD) and joint venture partners.</li> </ul>	<p><b>Assumptions for achieving purpose:</b></p> <ul style="list-style-type: none"> <li>-- ONAREP recognizes necessity of attracting foreign investment to explore, develop, and produce petroleum.</li> <li>-- Generating prospects is key to ONAREP's exploration philosophy.</li> <li>-- Expatriate firms can be attracted to Morocco based on improved data.</li> </ul>
<p><b>Outputs:</b></p> <ul style="list-style-type: none"> <li>-- State-of-the-art geological/geophysical techniques employed to gather and analyze data.</li> <li>-- Improved preparation and presentation of exploration and promotion reports to potential private sector partners.</li> <li>-- Prospects generated of sufficient quality to attract private sector partners.</li> </ul>	<p><b>Magnitude of Outputs:</b></p> <ul style="list-style-type: none"> <li>-- Better data gathered and analyzed in areas of project concentration (3-6 exploration reports).</li> <li>-- Reporting and presentation procedures improved. (4-8 promotion reports)</li> <li>-- More and better prospects identified in Pre-Rif and at least three additional areas to be determined.</li> </ul>	<ul style="list-style-type: none"> <li>-- Comparison of old/new techniques.</li> <li>-- Review of ONAREP promotions budget.</li> <li>-- ONAREP accounts and annual report.</li> </ul>	<p><b>Assumptions for achieving outputs:</b></p> <ul style="list-style-type: none"> <li>-- ONAREP applies State-of-the-Art techniques put at their disposal.</li> <li>-- Better data and analysis likely to generate saleable prospects.</li> <li>-- Expatriate firms willing to receive and review exploration and promotion reports.</li> </ul>
<p><b>Inputs:</b></p> <p>USAID: \$4.0 Million- TA/Training/Commodities</p> <p>GOM: \$1.5 Million- TA/Project Support</p>	<p><b>Implementation Target (Type and Quantity)</b></p> <p><b>Technical Assistance</b> -237 pm (181 pm long-term &amp; 12 pm short-term advisors in Morocco; 54 pm U.S.-based TA support).</p> <p><b>Training</b> - 1 Masters (24 pm); Short-term training (19 pm); Industry internships (16 pm); Technical seminars (6); English language 150 enrolled.</p> <p><b>Commodities</b></p> <p>Micro computers (3) &amp; software; technical library books.</p>	<ul style="list-style-type: none"> <li>-- Annual Books of ONAREP/ MOF.</li> <li>-- ALIGU, TOFFL, GMAT tests administered/passed.</li> </ul>	<p><b>Assumptions for providing inputs:</b></p> <ul style="list-style-type: none"> <li>-- MOF sustains its commitment to fund ONAREP</li> <li>-- Qualified training candidates can be nominated.</li> <li>-- Peer review by other explorationists, geological and economic risk analysis, improved oversight of seismic contractor.</li> </ul>

ANNEX II

Conventional Energy Management and Training  
Project 608-0176

Original and Revised Financial Summary  
(\$000)

USG Contributions (life of Project Funding)

<u>Category</u>	<u>Original</u> (Life of Project)	<u>Revised</u> (Life of Project)	<u>Change</u> (+/-)
Short-term training Direct AID funding	230	201	-29
Academic Training Direct AID Funding	186	46	-140
Project Evaluation and Monitoring	174	71	-103
Contingency	210	30	-180
Short term Training via Technical Assistance Contractor	290	210	-80
Commodities Direct AID Funding	20	15	- 5
Technical Assistance	<u>3,890</u>	<u>3,427</u>	<u>-463</u>
Total	5,000	4,000	-1,000

ANNEX III

Conventional Energy Management and Training  
Project 608-0176

Original and Revised Project Inputs  
Summary

<u>USAID</u> <u>Contribution</u>	<u>Units</u>	<u>Original</u> <u>Project</u>	<u>Revised</u> <u>Project</u>
<u>1. Resident Advisors</u>		<u>174</u>	<u>181</u>
Senior Petroleum Advisor	pm	36	23
Joint Venture Promotions Specialist	pm	24	38
Regional Geologist	pm	36	32
Geophysicist	pm	36	33
Reservoir Engineer	pm	24	21
Surface Facility Eng.	pm	18	22
Explorationist	pm	-	12
<u>2. Short-term Advisors</u>	pm	<u>9</u>	<u>26.5</u>
<u>3. Training</u>			
English language			
Regular	No	27	130
Intensive	No	20	20
Short courses in U.S.	PM	58	32
Seminars/Conf. in U.S.	PM	6	7
Internships	PM	24	16.5
Academic	PM	96	24
Technical Seminars in Morocco	No	6	6

4. Commodities

Project funded commodities include: office equipment, furniture, and appliances for the technical assistance advisors, microcomputer equipment (three PCs) and accessories, computer software, and technical books.

Notes:

pm = person months  
PM = Participant months  
No = Number