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PROJECT ASSISTANCE COMPLETION REPORT

ENERGY POLICY PLANNING
PROJECT NO. 263-0123.1

AGENCY FOR INTERNATIONAL DEVELOPMENT
CAIRO, EGYPT

OFFICE OF SCIENCE AND TECHNOLOGY
HUMAN RESOURCES DEVELOPMENT COOPERATION

Drafted by: S&T

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Annex A: Activity Illustrative Financial Plan

LIST OF ACRONYMS

ANL	Argonne National Laboratory
DOE	US Department of Energy
EPP	Energy Policy Planning (project)
GOE	Government of Egypt
OEP	Organization for Energy Planning
ORNL	Oak Ridge National Laboratory
PACD	Project Assistance Completion Date
PASA	Participating Agency Service Agreement
PP	Project Paper
PROAG	Project Agreement
SCE	Supreme Council on Energy
USAID	US Agency for International Development

BACKGROUND

In 1982, USAID approved an "Energy Policy Planning, Renewable Energy Field Testing, Utilities Management Project" for Egypt. The terms of the agreement initiated an "Energy Policy Planning" subproject (263-0123.1 -- hereafter referred to as "the project") which called for assistance to the Government of Egypt (GOE) in institution-building, professional development and special studies related to energy planning.

Under the terms of the Activities Grant Agreement (8/29/82), the project was scheduled to end on December 31, 1986 and was authorized with $8.5 million in USAID funds. During the course of the project, five amendments extended the final Project Assistance Completion Date (PACD) to May 31, 1991 and set the final obligation at $8.15 million. (see Annex A for Activity Illustrative Financial Plan).

I. PROJECT DESCRIPTION

The purpose of the Energy Policy Planning project is to assist the GOE in strengthening its institutional capacity for energy planning and policy. As its final objective, the project sought to overcome the problem of ineffective development and utilization of indigenous and imported energy resources in a manner consistent with, and in support of, overall national economic and social development plans. In order to fulfill this objective, the project was designed with three components: Institution-Building, Professional Development and Special Studies.

A. Institution Building Task Summary

This task focused assistance to the Egyptian government on establishing a capacity for integrated energy analysis within the Organization for Energy Planning (OEP). This assistance was to take several forms:

- Work with the OEP staff to define appropriate tasks and additional functions to be undertaken, build OEP's organizational structure and develop coordinating mechanisms with other Egyptian government institutions;

- Assist in the definition of energy-related data collection requirements, evaluation techniques and management tasks;

- Identify and adapt to Egyptian conditions the analytical tools necessary to undertake integrated energy analysis and provide both the software and hardware required to carry out these analyses; and

- Develop the capability to evaluate energy policies, relate the effects of these policies to the economy, and develop economical, technically feasible and politically acceptable options for decision makers and implementing ministries.

Current Component Status: This activity has been successfully achieved as was noted in the 1989 Project Evaluation. (For information regarding OEP, see section II).

B. Professional Development Component Task Summary

Professional development covered a range of subject areas as listed below:

- Provide training on data collection and analysis techniques to staff in those ministries which are collaborating on such activities with OEP.

- Acquaint key personnel with the role of energy in economic development and the implications of energy pricing structures. Place particular emphasis on standard macroeconomic issues, including price theory and welfare economics. Also train staff from ministries dealing with financial issues and energy consumption (e.g., Economy and Transportation).

- Provide training to acquaint government personnel with approaches to analyzing energy systems for their economic, technical and social effects. Include training in industrial energy efficiency evaluations and techniques for economic analyses of alternative technologies.

- Provide training to inform decision makers of trends in energy-related technologies (e.g., renewable energy systems, heat recovery systems, electric motor controls, energy efficient irrigation systems).

Current Component Status: An Energy Data Collection System is in place and OEP has trained over 3000 Energy Managers, primarily from the industrial sector. Currently, OEP is conducting Energy Audits for industrial sites in both public and private sectors. To date, 50 full-time specialists have been trained compared to a Life-of-Project (LOP) goal indicator of 10-15. This activity was completed by the PACD.

International experts have conducted week-long training seminars:

- Industrial Energy Conservation (May 1984)
- Energy Cogeneration Policy (May 1988)

- Industrial Energy Conservation Policy (June 1988)
- Energy Policy and Planning (August 1988)
- Energy Conservation in Steam Systems (January 1990)
- Energy Conservation in the Agriculture Sector (January 1990)
- Energy Conservation in the Buildings Sector (May 1990)
- Energy Conservation in Boilers and Accessories (May 1990)
- Energy Conservation in Transportation (September 1990)

Implementation of some recent training programs were delayed by a reluctance on the part of the Department of Energy (DOE) to include the USAID mandatory Audit and Record clause in a sub-contract between one of their subsidiary laboratories and the prime EPP contractor, Meta Systems. After substantial negotiations between DOE, USAID and the prime contractor, the subcontract was signed and the training program was successfully implemented. All training activities were completed by the PACD.

C. Special Studies Component Task Summary

Special studies task focused on topics of immediate interest to the Egyptian government. They were to be coordinated jointly by US and Egyptian experts (both public and private sectors). Results of the studies were to contribute to the data information system and to standards for the transportation and building sectors.

Current Component Status:

- Studies have been completed in energy conservation in industry, agriculture, transportation and cogeneration.

- The High Efficiency Lighting Demonstration for Nasr City hospital is designed, installed and being monitored.

- Sectoral Policy Studies for industry and transportation were conducted to assess existing policy and areas of policy reform for two major energy consumers.

- OEP and U.S. contractors (A.D. Little, RCG/Hagler Bailly, and Foster Wheeler) conducted eleven in-depth energy audits:

  - Cairo Dying & Finishing Co.
  - National Co. for Metal Industry
  - El-Nasr Co. for Coke & Chemicals
  - Misr Chemical Co.
  - El-Nasr Co. for Preserved Foods
  - Edfina Food Co.
  - The Egyptian Co. for Starch and Yeast

- Cairo Co. for Oil & Soap
- Helwan Portland Cement Co.
- El-Nasr Pharmaceutical Co.
- Alexandria Petroleum Co.

- OEP conducted an additional five audits with assistance from the Government of Sweden:

  - America Petroleum Refinery Co.
  - El-Nasr Co. for Sand Bricks
  - El Nasr Co. for Forging
  - Misr Helwan Spinning & Weaving
  - Paper Co. for Middle East (SEMO) (Cogeneration)

- If all the attractive Energy Conservation Opportunities (ECOs) identified in the sixteen selectively audited plants were implemented at an estimated cost of US $43.55 million, the simple payback period on the investment would be 1.72 years. The annual energy savings to Egypt would be over $25 million and the energy savings from the ECOs identified in the sixteen plants audited represent over 24% of the energy consumed at these plants. On an average, improved housekeeping contributed to about 10% of the energy saving potential in the industries with a payback period of two months. The OEP energy audits, which document the great potential for energy savings in Egypt, are currently being used by the USAID-assisted Energy Conservation and Efficiency Project (263-0140.3).

II IMPLEMENTING AGENCY

The Organization for Energy Planning, which serves [illegible] the implementing agency for the project, was establish[illegible] by presidential decree (4/16/83), according to the terms [illegible] the Project Grant Agreement. Its purpose was to provide te[illegible]l assistance to the Egyptian Supreme Council on Energy (SCE), [illegible]ch was established in 1979 with the principal responsibilit[illegible] of planning Egypt's energy program and addressing, and bringing [illegible] President's attention, major energy issues. SCE and the Ex[illegible]e Board of OEP were originally headed by Eng. Ahmed Ezz El Din [illegible], who was the Deputy Prime Minister for Production. Althou[illegible] position of Deputy Prime Minister for Production was elimina[illegible]d SCE never met, OEP continued to operate under Eng. Hil[illegible] retained the position as Minister of Petroleum. Currently, [illegible] organizationally attached directly to the Ministry of Pe[illegible] and, thus, is not directly linked to the main GOE energy d[illegible] making groups.

Initial EPP Project support for OEP was provided by Argonne National Laboratory (1983-86), under a Participating Agency Service Agreement (PASA), and then by Meta Systems Inc. (1987-90), under a host-country contract.

The expertise of OEP's staff, which is composed of engineers, economists and computer specialists, is focused on the following fields:

- energy demand and supply data collection and analysis;
- integrated energy planning through a balancing of energy supply and demand using appropriate analytical methods; and
- economic and socio-economic analyses of alternative energy plans, energy prices, and implementation policies.

In its early years, OEP emphasized an industrial energy conservation program which remains a major part of its portfolio. Since the appointment of its third Chairman, Eng. Ibrahim Hassaan, OEP has upgraded its capabilities for energy policy studies and is seeking an enhanced role in national energy policy-making. OEP currently has excellent energy analysis and planning capability (See Section VI, Evaluation). Staff resources include 54 professional and 36 nonprofessional employees. The annual GOE budget allocation for OEP was about LE 1.5 million for the 1989-1991 period.

III GOE CONTRIBUTION

The Activity Grant Agreement sets the GOE contribution to the project at LE 4.212 million, in the form of in-kind and cash contributions, to be spent on Egyptian salaries, primary data collection expenses and other costs. The actual contribution of LE 6.9 million from 1983-91 was provided primarily in-kind (OEP staff salaries and office facilities), but also includes LE in cash for OEP projects.

IV US CONTRACTORS

The following US contractors assisted in the implementation of the project:

FUNCTION CONTRACTOR	SIGN DATE END DATE	CONTRACT DOLLARS[1]	CONTRACT TYPE
Prime Tech/Mgt Support			
Argonne Nat'l Lab	09/30/83 05/31/86	$1,165,529	PASA
Meta Systems Inc.	12/12/86 5/28/91	$5,251,838	CR & FF - HCC
Industrial Energy Audits			
Arthur D. Little	01/06/88 04/09/88	$144,175	CR & FF-Direct (IQC)
Burns & Roe/ Hagler Bailly Inc.	01/01/88 09/30/88	$269,557	CR &FF-Direct (Buy-In)
Hagler Bailly Inc.	05/02/89 07/30/89	$207,721	CR & FF-Direct (Buy-In)
Foster Wheeler	12/10/87 10/01/88	$419,709	CR & FF-Direct (IQC)
Foster Wheeler	08/14/89 03/16/90	$576,148	CR & FF-Direct (IQC)
Project Evaluation			
Oak Ridge Nat'l Lab	3/89 8/89	$50,053	CR - Direct (Buy-In)
PROJECT TOTAL		$8,084,730	

LEGEND:

CR	Cost Reimbursable
FF	Fixed Fee
IQC	Indefinite Quantity Contract
HCC	Host-Country Contract
Direct	USAID-Contractor Agreement
PASA	Participating Agency Service Agreement

Total Contract Dollars represents Total Committed Amount against such contracts

V PROJECT ACHIEVEMENTS

The logical framework provides a series of Objectively Verifiable Indicators, Means of Evaluation and Important Assumption which are useful in assessing project achievements. Based on the Logical Framework outline, the following general statements can be made:

- Virtually all anticipated inputs were used.
- The OEP was created, links with US agencies were established and full-time technical staff were trained.
- Steps were initiated towards establishing policy-level networks for the purpose of affecting GOE energy policy decision-making.

VI EVALUATION

A team from Oak Ridge National Laboratory (ORNL) and the Department of Energy (DOE) conducted the projects' only evaluation between March 26 and April 13 of 1989. The final evaluation report was submitted that August. On the basis of its information gathering -- including extensive briefings, interviews, document reviews, field site visits and discussion -- the evaluation team concluded that:

(1) The primary objective of the project, institution-building, had been substantially achieved. The evaluation team concluded that the capability developed at OEP in energy planning and analysis is "unsurpassed in any other AID-assisted country".

(2) OEP had become a significant resource for energy planning and policy-making in Egypt, and this potential could be realized through concerted action by USAID and GOE. More specifically:

   (a) The final-year effort called for a more effective working relationship between USAID/Cairo and OEP than had existed at several stages in the project to date.

   (b) The institutional location of OEP as responsible to the Minister of Petroleum is not a binding constraint on the Organization's ability to contribute to energy planning in Egypt.

(c) As impressive as they are, OEP's capabilities for policy studies are not well known to AID and GOE.

(d) If the objectives of the project are to be achieved, OEP needs to add to its record of contributing to industrial energy conservation awareness: a record of making a difference for energy decisions in Egypt, and a record of contributing to energy planning and policy-making in the country.

(e) OEP needs to enhance the ability of its staff to appreciate energy issues from the policy maker's point of view and to communicate effectively with a policy maker audience.

(3) During the final year of the project, the focus of OEP's activities should be refined, considering national needs and OEP's place in the national energy policy making system.

(4) In order to sustain the institution-building accomplished by the project, technical assistance should be continued after the end of the project on a more focused basis and at a more modest scale.

(5) Both the Argonne and Meta Systems contracts have been fruitful.

VII AUDIT REPORT

The only US Government audit activity was a small, non-federal investigation of Meta local currency expenditures. No audit recommendations are outstanding.

VIII PROBLEM RESOLUTION

The project succeeded in achieving its purpose of strengthening GOE's institutional capacity to process and analyze energy data by precipitating the creation of the OEP. However, OEP has had limited impact on solving the root problem of ineffective development and utilization of energy resources. Although OEP has proved itself to be a competent analytical body, it currently lacks both formal and informal mechanisms for feeding its analytical

outputs into the GOE energy policy planning and decision-making processes. OEP is taking steps to become a more active participant in the GOE's energy policy dialogue.

IX FINAL DESIGN ADJUSTMENT RECOMMENDATIONS

There are no recommendations for adjustments in the design of the project at this point. It would be useful, however, to recollect a few of the design adjustment suggestions posed by the ORNL/DOE evaluation team:

(1) USAID/Cairo should;
- (a) Assure that appropriate USAID staff are fully familiar with OEP purposes and capabilities.
- (b) Support and participate in dialogues with GOE to expand OEP's channels for communication perspectives.
- (c) Work closely with OEP regarding priorities for the final year of the project.
- (d) Assure effective coordination with OEP in connection with new USAID/Cairo energy project initiatives.
- (e) Identify and explore alternatives for a new energy planning assistance mechanism.

(2) OEP should:
- (a) Prepare for possible changes in its financial support base with the end of the current project.
- (b) Emphasize openness and outreach in establishing the important roles that its capabilities are ready to support.
- (c) Continue its shift of emphasis toward policy studies and recommendations, focused on high-priority issues for energy policy making in Egypt. More specifically, OEP should:
  - (*) Link its strong energy conservation expertise with analysis of current policies and development of new policies.
  - (*) Seek opportunities to increase its attention to petroleum and natural gas policy issues.

(*) Continue its attention to energy pricing issues, related closely to dialogues with policy-makers about priorities for analysis.

(d) Build OEP staff skills in communicating with energy policy-makers as well as technical experts.

(e) Expose OEP staff to a broad range of international experience with policy analysis and modeling.

X POST-PROJECT AID RESPONSIBILITIES

USAID is actively involved in a policy dialogue with the GOE on electricity prices. USAID's $336 million assistance to the electricity sector in FYs 1989 to 1991, was conditioned on substantially real increases in electricity prices. With continued strong interest in energy price reform, USAID will maintain its relationship with the OEP following the termination of the project.

XI LESSONS LEARNED

The Intermediate Evaluation offered the following conclusions, applicable to other AID projects in Egypt and elsewhere.

(a) Institution-building needs a commitment to sustained long-term support. As many other experiences in developing countries have shown, institution-building is a long, complex process, calling for support beyond an "incubation" stage. Most AID projects with this aim will need to be associated with technical and other kinds of assistance for more than 4-5 years, even if many things go right. AID's commitment to institution-building should normally mean a commitment to staying with the process where it has been deemed worthwhile to initiate it.

(b) Personal factors are extremely important in determining the success of institution-building. Such matters as leadership qualities and human relationships, which are difficult to capture in project plans, can dominate the implementation of an institution-building project. In many cases, this suggests a need for particular attention to process variables in project planning.

(c) Host-country contracts may be hard to reconcile with efforts by Mission to collaborate actively in project management. Although experiences with host-country contracts vary widely, the history of this project suggests that -- under many sets of conditions -- host-country contractors can find it difficult to be responsive to its client, the counterpart agency, without appearing to be unresponsive to USAID. A decision to use the host-country contracting mechanism should be cognizant of a loss of Mission control.

(d) Intermediate project evaluations are powerful instruments for keeping a project in line with objectives. The evaluation team believes that this particular intermediate evaluation was a catalyst for activities that moved closer to its original aims. This is not to suggest that OEP or USAID played games to get a favorable evaluation. The realization of an upcoming evaluation was simply a reminder to compare present activities with evaluation criteria. In this case, the result was a significant advance in capability development and new momentum for policy-oriented programs, to the satisfaction of all concerned.

(e) For relatively long-term institutional development projects, project plans should be written so as to allow considerable flexibility in responding to changing conditions. Detailed project plans can create problems for a project being implemented in the midst of uncertainty, because some of the partners in the agreement are likely to take them very seriously. One effect can be a loss of resilience in project operation. Another effect can be strains between partners who see PP directives as a contractual agreement and partners who see them as general guidelines permitting considerable flexibility. For multi-year projects, it will often be helpful to differentiate clearly between directives that require PP provisions or PROAG amendments before even minor changes can be made and directives that allow more latitude for modification by less formal and time-consuming mechanisms for joint agreement (e.g., memoranda of understanding).

RECOMMENDATION

The Office of Science and Technology recommends that the status of the project be designated by the Director as "completed," with no formal follow-on monitoring.

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ANNEX A

RENEWABLE ENERGY FIELD TESTING

ACTIVITY ILLUSTRATIVE FINANCIAL PLAN

(Following the Third Amendment to the Activity Agreement)

(all amounts in dollars unless otherwise specified)

ACTIVITY ELEMENTS	PREVIOUS BUDGET	DEOBLIGATED AMOUNTS	NEW BUDGET	GRANTEE (LE 000's)
Technical Assistance	8,387,954	(350,000)	8,037,954	3,184
Training	61,993	--	61,993	1,028
Commodities	--	--	--	--
Evaluation	50,053	--	50,053	--
TOTAL	$8,500,000	($350,000)	$8,150,000	4,212