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39348

**ENERGY CONSERVATION SERVICES PROGRAM:  
Second Quarterly Report, FY 1985  
(1/1/85-3/31/85)**

Contract No. DAN-5728-C-00-3073-00

HBC Reference No. 84-150(6)

Prepared for:  
Office of Energy  
U.S. Agency for International Development  
Washington, DC 20523

Prepared by:  
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2301 M Street, NW  
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May 2, 1985

## SUMMARY

The Energy Conservation Services Program (ECSP) provides a broad range of technical advisory services, training, and information dissemination activities to AID-assisted countries.\* The objective of this 4-year program is to promote energy conservation in industry, transportation, electric power generation and transmission, and commercial and institutional building design and operation. On September 15, 1983, the U.S. Agency for International Development (AID) contracted with Hagler, Bailly & Company (prime contractor) and Reliance Energy Services (subcontractor) to provide technical and management assistance to the program. In the first year of the contract, 18 separate activities were initiated and carried out from September 15, 1983 to September 28, 1984. So far during the second year of ECSP, five separate activities have been initiated and carried out.

In November of 1984, Hagler, Bailly & Company became a subsidiary of RCG International. As part of this acquisition, the operations of Reliance Energy Services, another RCG subsidiary, were merged with Hagler, Bailly & Company.\*\*

The second Quarterly Activity Report of the second year of ECSP covers the period January 2 through March 31, 1985. During this quarter, nine separate activities were carried out; eight of these activities were initiated in one of the previous quarters (see Exhibit 1). The emphasis during the quarter was placed on (1) working with AID/Islamabad to initiate an energy conservation program in Pakistan, (2) conducting a regional energy conservation seminar (Seminario sobre la Conservacion de Energia) in Costa Rica for the Latin American and Caribbean countries, and (3) sending a fact-finding mission to Haiti to study the energy efficiency of the sugar and other manufacturing industries. A total of 19 professional person-weeks was spent in Costa Rica,

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\*This program is part of the Energy Policy Development and Conservation Project.

\*\*For the purposes of this report, all future references to Reliance Energy Services or any of its employees will be incorporated under the name of Hagler, Bailly & Company.

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hibit 1

Summary of ECSP Activities  
(ception to date)

Activity	Period of performance	Budget	Cumulative expenditures (3/31/85) <sup>1</sup>
Program management development, including preparation of in-country mission program planning activities; preparation of Update report on ECSP activities; publication of descriptive brochure on ECSP; providing technical assistance to AID-, ESCAP-, and National Research Council-sponsored meetings; preparation of an international mailing list of individuals working on energy conservation in developing countries; planning for evaluations of AID projects in the Dominican Republic, Central America, and Djibouti (HBC reference 150/151)	9/15/83-ongoing	None	\$154,105
Organization, preparation, and presentation of 2-week energy demand management and conservation training course in Sri Lanka for Ministry of Power and Technology -- December 7-17, 1983 (HBC reference 152)	10/10/83-12/30/83	\$124,131	\$126,259
Support in preparation of Technology Transfer for Energy Management Project Paper with U.S. AID/Philippines and Ministry of Energy/Bureau of Energy Utilization (HBC reference 153)	9/15/83-4/30/84	\$133,000	\$ 86,778
Development of data base on AID-funding energy conservation initiatives (HBC reference 154)	10/8/83-5/11/84	\$ 14,451	\$ 13,407
Preparation of energy auditing manual for use in Sri Lanka (HBC reference 155)	10/21/83-2/27/84	\$ 38,465	\$ 43,755
Organization, preparation, and presentation of 4-week energy auditing course in Sri Lanka for Ministry of Power and Energy -- February 27-April 10, 1984 (HBC reference 156(a))	1/3/84-4/10/84	\$ 80,220	\$ 77,788
Completion of full audit reports and feasibility study of energy conservation project for Sri Lanka Tyre Corporation and Thulhiriva Textile Mills (HBC reference 156(b))	3/15/84-8/15/84	\$ 69,061	\$ 68,257
Development of ECPIE: Energy Conservation Project Investment Evaluation Model and user manual (HBC reference 157)	1/3/84-8/30/84	\$ 23,805 <sup>2</sup>	\$ 40,524
Preparation of monograph on innovative approaches to financing energy conservation investments in less developed countries (HBC reference 158)	1/3/84-9/10/84	\$ 7,500 <sup>2</sup>	\$ 10,257
Completion of feasibility study of guide and directory of U.S. energy-efficient equipment for distribution to developing countries -- activity jointly sponsored with Office of Industrial Programs, U.S. Department of Energy (HBC reference 159)	1/3/84-7/12/84	\$ 25,000	\$ 25,941

<sup>1</sup>Based on labor costs incurred and invoices received only.  
<sup>2</sup>Scope of work was expanded subsequent to budget preparation.

hibit 1 (continued)

Summary of ECSP Activities  
(ception to date)

Activity	Period of performance	Budget	Cumulative expenditures (3/31/85) <sup>1</sup>
Missions to ASEAN countries to assist in the project planning for regional building energy conservation activities (HBC reference 160)	5/5/84-6/4/84	None	\$ 31,753
Mission to assess current energy situation in the transportation sector of Costa Rica and identify possible AID-funded activities to improve energy use efficiency; conducted in cooperation with Oak Ridge National Laboratory (HBC reference 161)	5/14/84-ongoing	None	\$ 25,748
Planning and preparation for the Latin America/Caribbean Regional Energy Conservation Seminar (HBC reference 162)	5/14/84-ongoing	\$102,000	\$104,638
Missions to Ecuador and Peru to assist in developing industrial energy conservation outreach services and programs (HBC reference 163)	5/14/84-ongoing	None	\$ 19,625
Ecuador industrial energy conservation training, curriculum development, and audits (HBC reference 164)	7/14/84-3/31/84	\$104,157	\$ 96,162
Revision of training manual for energy demand management and conservation training course for industry and buildings (HBC reference 165)	7/14/84-ongoing	\$ 10,675	\$ 13,283
Revision of industrial energy audit manual (HBC reference 166)	7/14/84-9/1/84	\$ 14,458	\$ 15,241
Evaluation of the IIP/TVA Conventional Energy Training Project (CETP) Course (HBC reference 167)	6/30/84-9/30/84	\$ 19,096	\$ 21,704
Organization and planning of the Pakistan National Energy Conservation Center (HBC reference 168)	9/8/84-ongoing	\$275,000	\$159,562
Industrial Energy Conservation Program (Dominican Republic) Evaluation (HBC reference 169)	10/1/84-2/28/85	\$ 20,000	\$ 21,804
Regional Industrial Energy Efficiency Project (Central America and Panama) Evaluation (HBC reference 170)	10/1/84-3/15/85	\$ 36,000	\$ 37,415
Energy Initiatives Project (Djibouti) Evaluation (HBC reference 171)	11/30/84-2/15/85	\$ 16,286	\$ 17,225
Fact-finding mission to Haiti to examine the energy efficiency of the sugar and manufacturing industries (HBC reference 173)	2/20/85-12/31/85	\$ 11,500	\$ 10,944

Based on labor costs incurred and invoices received only.

Haiti, and Pakistan (see individual reports for country-by-country length of visit).

As the scope of activities under ECSP has grown and involved a widening circle of other AID projects, additional resources have become available to support energy conservation work. The planning efforts in the Philippines (HBC Reference No. 152) and Pakistan (HBC Reference No. 168) have received direct funding from the AID missions in those countries. The Bureau of Latin America and the Caribbean provided half the funding for the Energy Conservation Seminar (HBC Reference No. 162), and the mission in the Dominican Republic and the Regional Office for Central America and Panama (ROCAP) provided funding for the evaluations of their respective projects (HBC Reference Nos. 169 and 170). ROCAP has subsequently provided additional funding to support planning work for SIECA (Secretaria Permanente de Integracion Economica Centroamericana).

A number of activities described in this quarterly report are continuing into the next quarter, and certain new activities are under consideration. ECSP contractor staff will continue to support the mission in Pakistan in the development of that country's national energy conservation plan. Another mission to Haiti is planned to pursue the opportunities identified in industry. Upcoming next quarter will be a mission to Sri Lanka to explore the opportunities for an energy conservation project in the agricultural sector and possible missions to Indonesia and Thailand to determine whether there is a role for ECSP in those two countries. Planning and discussions are continuing to explore possible projects in the transportation (e.g., Costa Rica) and building (e.g., ASEAN region) sectors.

Quarterly expenditures, as shown in Exhibit 2, were \$224,056, as compared with \$294,874 in the first quarter of the second year of the program (see Exhibits 3 and 4).



Exhibit 2

Second-Quarter Expenditures, FY 1985  
(Sixth Quarter of the Contract) -- Summary

	<u>Contract budget<sup>1</sup></u>	<u>Quarterly expenditures<sup>2</sup></u>	<u>Cumulative expenditures through 3/31/85<sup>2</sup></u>	
			<u>\$</u>	<u>%</u>
Salaries	\$ 344,063	\$ 56,891	\$ 290,197	84.3
Fringe benefits	89,456	14,137	72,954	81.6
Overhead	390,168	67,777	342,436	87.8
Travel/trans./per diem	274,722	38,077	118,520	43.1
Other direct costs	41,200	33,232	95,869	232.7
Equipment	50,000	0	0	0
Subcontractor	<u>667,348</u>	<u>0</u>	<u>215,752</u>	<u>32.3</u>
<b>Total estimated costs</b>	<b>\$1,856,957</b>	<b>\$210,116</b>	<b>\$1,135,730</b>	<b>61.2</b>
Fixed fee	<u>123,698</u>	<u>13,940</u>	<u>75,703</u>	<u>61.2</u>
<b>Total estimated costs and fixed fee</b>	<b>\$1,980,655</b>	<b>\$224,056</b>	<b>\$1,211,433</b>	<b>61.1</b>

<sup>1</sup>Only \$1,479,409 has been obligated so far, of which \$299,000 has been contributed by Regional Bureaus and Missions.

<sup>2</sup>Based on labor costs incurred and invoices received as of 3/31/85.

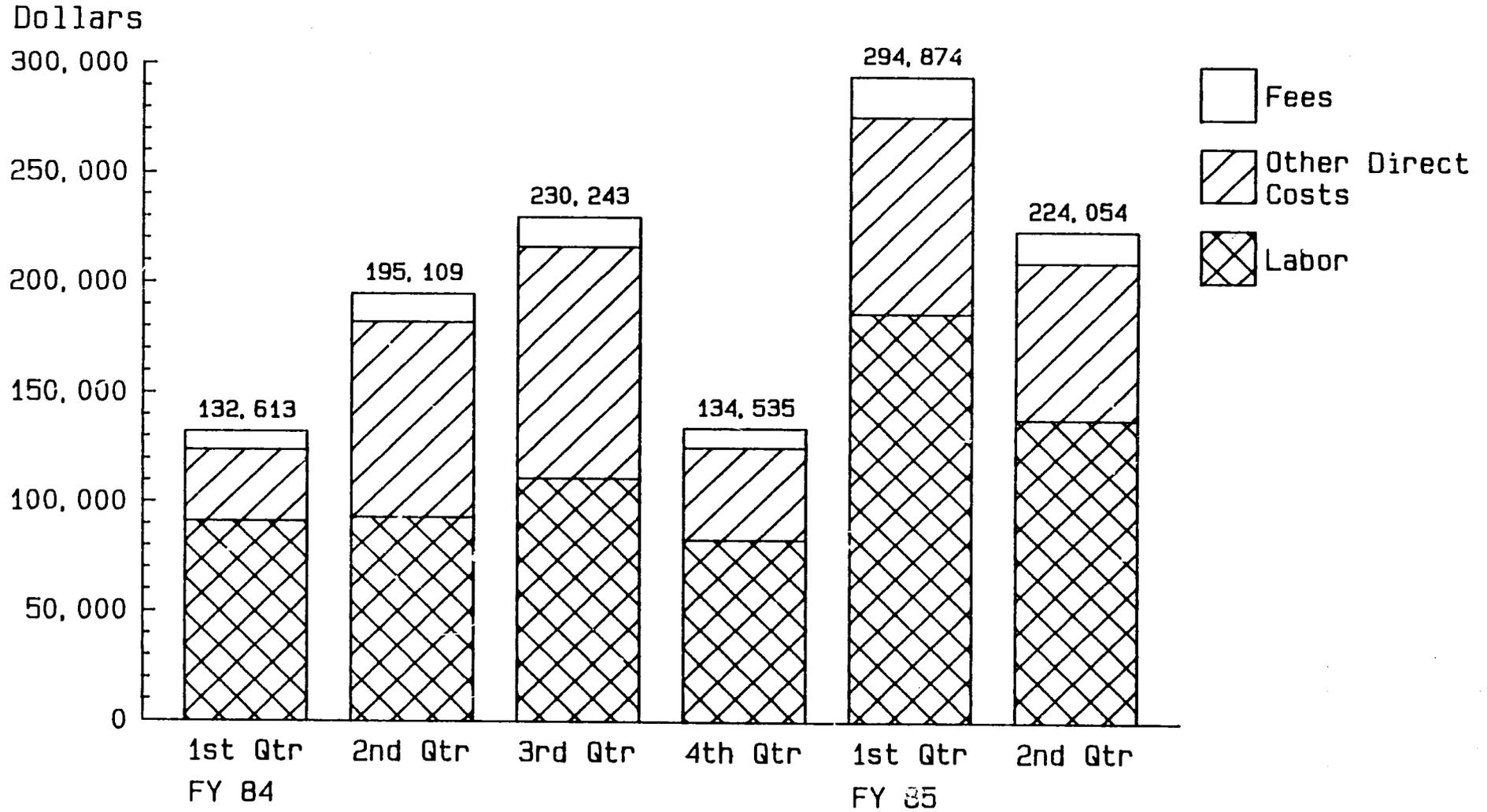
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Exhibit 3

ECSP Expenditures by Quarter

<u>First year</u>		<u>Second year</u>	
First quarter (9/15/83-12/15/83)	\$132,613	First quarter (10/1/84-12/31/84)	\$294,874
Second quarter (12/15/83-4/1/84)	195,109	Second quarter (1/2/85-3/31/85)	224,056
Third quarter (4/2/84-6/30/84)	230,243		
Fourth quarter (7/2/84-9/28/84)	<u>134,535</u>		
<b>Yearly total</b>	<b>692,500</b>		

# ECSP Quarterly Expenditures for Labor, Other Direct Costs, and Fees



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**U.S. AID CONSERVATION SERVICES PROGRAM**  
**(Contract Number: DAN-5728-C-00-3073-00)**

**QUARTERLY ACTIVITY REPORT**  
**(For period 1/1/85-3/31/85)**

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**ACTIVITY:** Program Management and Development

**COUNTRY:** Not country-specific

**START DATE:** 9/15/83

**COMPLETION DATE:** Ongoing

**BUDGET:** None

**QUARTERLY EXPENDITURES:** \$ 35,028

**CUMULATIVE EXPENDITURES:** \$154,105

**ST/EY MANAGER:** Pamela Baldwin

**HBC MANAGER:** Henri-Claude Bailly

**HBC REFERENCE:** 150/151

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**DESCRIPTION**

This activity consists of the various management tasks associated with the execution of the contract -- e.g., progress review meetings, preparation of quarterly reports. It also includes planning activities associated with new initiatives. These initiatives are either triggered by the field or the regional bureaus or directly by S&T/EY. (Some of these initiatives eventually become separate activities for program management purposes.) The second-quarter initiatives for the second year of ECSP (in addition to those that are already treated as separate program activities) included:

- Publication and distribution of the Energy Equipment Cost Directory. The directory contains the prices and operational characteristics of several types of energy-efficient equipment, including boiler systems, electrical systems, lighting systems, heat exchangers, and various types of instrumentation. The directory, intended as a guide for managers in developing countries, is not an exhaustive listing of equipment or manufacturers, but rather serves as a handbook for gathering information that may not be readily available in-country. It is intended that the directory be updated at regular intervals. The initial mailing went out to approximately 30 individuals in Latin America and the Caribbean.

- During this quarter, the energy auditing manual was translated into Spanish by the staff at the Escuela Superior Politecnica del Litoral (ESPOL) and reviewed by Hagler, Bailly for editorial changes. The manual, which was originally prepared for use in Sri Lanka as part of the Energy Demand Management and Conservation Training Course (see QAR, 12/15/83-4/1/84), was revised during the fourth quarter for general use in any AID-recipient country. The Spanish version of the manual will be available next quarter, when final editing of the translation is completed.
- As part of the ECSP mission to enhance the skills of energy professionals in developing countries, some time and attention have been given to promoting an international network of energy managers. The seminar held in Costa Rica helped to promote exchange among private- and public-sector energy professionals in the region. Conversations have been held with the Association of Energy Engineers, an Atlanta-based organization with an international membership and the sponsor of the annual World Energy Engineering Conference, to see whether the services and resources of this private organization could be of assistance to ECSP activities. Specifically, we are exploring with AEE whether the Certified Energy Manager program it has developed could be made a part of ECSP training programs and whether a meeting to discuss the formation of an international network of energy managers could be held during this year's World Energy Engineering Conference.
- In support of the efforts of AID's Office of Energy, but apart from the ECSP program activities, Hagler, Bailly & Company -- in cooperation with the Oak Ridge National Laboratories -- assisted AID in analyzing the foreign exchange pressures on the economies of AID-assisted countries. Specifically, 45 countries were selected for evaluation of their energy conservation potential, determined largely by the availability of information on the country. Categories were developed for placing countries into meaningful groups with regard to their potential for energy savings. With this breakdown, a list of targeted activities and the necessary budget for implementing such measures were drawn up for a 3-year period, and are contained in the draft report and appendix.
- A slide presentation on March 7, 1985 was given to the senior staff of the Bureau of Science and Technology by Henri-Claude Bailly concerning the activities of ECSP to date. The program's development goals were outlined in the context of the severe energy problems facing most AID-

assisted countries. Economic development necessitates increased commercial energy use. In turn, the high cost of imported oil precludes expenditures on other vital imports such as food and intermediate goods. The energy conservation measures executed thus far under the program have made significant strides in reducing the dependency of a select group of AID-recipient countries on energy imports, particularly in the industrial sector. AID remains in a position to foster energy conservation measures in developing countries where, without assistance, the ability to conserve energy would be severely handicapped by distorted market signals and a lack of information, skilled personnel, services, equipment, and financing.

- Analytical support of the Office of Energy's efforts to explain the continuing phenomenon of high oil prices in AID-assisted countries. The current oil price situation in these countries is attributed to the devaluation of local currencies against the dollar (the foreign exchange used for international oil transactions). Hagler, Bailly staff provided the data-gathering and quantitative analysis in support of this AID activity.

#### ACTIVITY REPORTS

1. Energy Equipment Cost Manual, February 1985.
2. The Energy Conservation Services Program (ECSP), presentation to senior staff/Bureau of Science and Technology, March 7, 1985.
3. Energy Conservation Services Program: Second Quarterly Report, FY 1985 (1/1/85-3/31/85), April 1985.
4. Elements of a Strategy for the United States Agency for International Development in the Area of Energy Conservation (draft report and appendix), March 1985.

#### KEY PERSONNEL

- Hagler, Bailly & Company: Henri-Claude Bailly, President; Alain Streicher, Vice President; Bruce Appelbaum, Associate; Richard Smith, Associate; Marc Babin, Associate; Gerald Schwinn, Associate; Bruce Exstrum, Associate; Faith Klareich, Research Associate; Ana-Mari Carasso, Research Associate

- U.S. AID/Washington: James Sullivan, S&T/EY
- Guayaquil, Ecuador: Rodolfo Paz and Alfredo Barriga, ESPOLE.

**EXPENDITURES**

(As of 3/31/85, based on labor costs incurred and invoices received):

	<u>This quarter</u>	<u>Cumulative</u>
Salaries	\$11,699	\$ 45,068
Fringe benefits	2,840	11,267
Overhead	14,108	53,519
Travel/trans./per diem	918	3,233
Other direct costs	3,275	26,648
Equipment	0	0
Subcontractor	<u>4,745</u>	<u>4,745</u>
<b>Total</b>	<b>\$32,841</b>	<b>\$144,481</b>
Fee	<u>2,197</u>	<u>9,624</u>
<b>GRAND TOTAL</b>	<b>\$35,028</b>	<b>\$154,105</b>

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**U.S. AID CONSERVATION SERVICES PROGRAM**  
**(Contract Number: DAN-5728-C-00-3073-00)**

**QUARTERLY ACTIVITY REPORT**  
**(For period 1/1/85-3/31/85)**

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**ACTIVITY:** ECPIE -- Energy Conservation Project Investment Evaluation Model (Contract Task Area 7)

**COUNTRY:** Not country-specific

**START DATE:** 1/3/84

**COMPLETION DATE:** Ongoing

**BUDGET:** \$23,805\*

**QUARTERLY EXPENDITURES:** \$ 5,879

**CUMULATIVE EXPENDITURES:** \$40,524

**ST/EY MANAGER:** Pamela Baldwin

**HBC MANAGER:** Henri-Claude Bailly

**HBC REFERENCE:** 157

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**DESCRIPTION**

This activity entailed the design and validation of a microcomputer-based financial and economic evaluation model. The computer program that has been developed analyzes the financial and economic performance and foreign currency usage of energy conservation, fuel substitution, and cogeneration investments.

The model, which was demonstrated during the Energy Conservation Seminar held in Costa Rica this quarter by ECSP (see HBC Reference 162), raised substantial interest among the participants at the seminar. During this quarter, final revisions were made to the model and the user's manual to reflect comments and suggestions made during the seminar. Based on the enthusiastic response to the presentation of the model, AID decided to make the model and user's manual available to those interested (approximately 25) at a price of \$40, with the proceeds from the sales going toward the cost of reproduction, shipping, and handling. As of the end of this quarter, four purchase requests had been received, and it is anticipated that sales will continue through next quarter.

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\*Budget was for a first version of the model, which was subsequently changed, expanded, and tested.

**ACTIVITY REPORTS**

1. The Energy Conservation Project Investment Evaluation Model (ECPIE): A User's Manual, March 1985.

**KEY PERSONNEL**

- Hagler, Bailly & Company: Henri-Claude Bailly, President; Michael Fisher, Manager.

**EXPENDITURES**

(As of 3/31/85, based on labor costs incurred and invoices received):

	<u>This quarter</u>	<u>Cumulative</u>
Salaries	\$2,302	\$14,075
Fringe benefits	574	3,518
Overhead	2,740	16,714
Travel/trans./per diem	0	3,324
Other direct costs	5,726	361
Equipment	0	0
Subcontractor	<u>0</u>	<u>0</u>
<b>Total</b>	<b>\$5,674</b>	<b>\$37,993</b>
Fee	<u>204</u>	<u>2,530</u>
<b>GRAND TOTAL</b>	<b>\$5,879</b>	<b>\$40,524</b>

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**U.S. AID CONSERVATION SERVICES PROGRAM**  
**(Contract Number: DAN-5728-C-00-3073-00)**

**QUARTERLY ACTIVITY REPORT**  
**(For period 1/1/85-3/31/85)**

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**ACTIVITY:** Transportation Energy Conservation (Contract Area 2)

**COUNTRY:** Costa Rica

**START DATE:** 5/14/84

**COMPLETION DATE:** Ongoing

**BUDGET:** None

**QUARTERLY EXPENDITURES:** \$ 5,655

**CUMULATIVE EXPENDITURES:** \$25,748

**ST/EY MANAGER:** Pamela Baldwin

**HBC MANAGER:** Alain Streicher    **HBC REFERENCE:** 161

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**DESCRIPTION**

The purpose of this activity is to assess the current energy situation in the transportation sector of Costa Rica. Opportunities for AID-funded and other activities that could improve the efficiency of energy use in this sector have been identified and outlined in the report of the ECSP reconnaissance mission.

Revisions to the draft report continued during this quarter.

**ACTIVITY REPORT**

None.

**KEY PERSONNEL**

- Hagler, Bailly & Company: Robert Kowalski, Senior Consultant; Gerald Schwinn, Associate; Ana-Mari Carasso, Research Associate
- Oak Ridge National Laboratory: David Greene, Frank Southworth

- U.S. AID/Washington: Robert Archer, LAC/DR
- U.S. AID/San Jose: Heriberto Rodriguez, Energy Officer; Alvaro Umana, Representative to MIEM/DSE
- Costa Rica: Alexandra Hernandez, Ministerio de Industria, Energia y Minas, Directorate Sectorial Energia.

**EXPENDITURES**

(As of 3/31/85, based on labor costs incurred and invoices received):

	<u>This quarter</u>	<u>Cumulative</u>
Salaries	\$ 722	\$ 7,268
Fringe benefits	180	1,817
Overhead	857	8,631
Travel/trans./per diem	0	2,165
Other direct costs	3,544	4,257
Equipment	0	0
Subcontractor	<u>0</u>	<u>0</u>
<b>Total</b>	<b>\$5,303</b>	<b>\$24,140</b>
Fee	<u>352</u>	<u>1,608</u>
<b>GRAND TOTAL</b>	<b>\$5,655</b>	<b>\$25,748</b>

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**U.S. AID CONSERVATION SERVICES PROGRAM**  
**(Contract Number: DAN-5728-C-00-3073-00)**

**QUARTERLY ACTIVITY REPORT**  
**(For period 1/1/85-3/31/85)**

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**ACTIVITY:** Seminario sobre la Conservacion de Energia (Contract Task Area 4)

**COUNTRY:** Latin America/Caribbean region

**START DATE:** 6/2/84

**COMPLETION DATE:** Ongoing

**BUDGET:** \$102,000

**QUARTERLY EXPENDITURES:** \$ 68,906

**CUMULATIVE EXPENDITURES:** \$104,638

**ST/EY MANAGER:** Pamela Baldwin

**HBC MANAGER:** Henri-Claude Bailly

**HBC REFERENCE:** 162

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**DESCRIPTION**

The energy conservation seminar was held in Costa Rica from January 14 to 17 and was jointly sponsored with the Costa Rican Ministry of Industry, Energy, and Mines and the Instituto Centroamericano de Administracion de Empresas (INCAE). The meeting was held at INCAE's campus facilities in Alajuela. Sixty-eight delegates attended from throughout the region. Attendees included AID energy officers and contractors, staff from AID-assisted energy conservation projects in the region, private-sector representatives, and government energy officials from the region. Everyone expressed the opinion that the seminar was a valuable source of new insights on energy conservation activities, provided an opportunity to share experiences among those working in the region, and began the development of a network of energy officials that will benefit future activities.

Sixteen papers were prepared and made available to each attendee in English, Spanish, or both. Throughout the sessions, there was simultaneous translation into English or Spanish. A full audio tape for all the sessions of the original presentation and the translation was also made. The final session of the seminar provided an opportunity to review and discuss conclusions and recommendations, which have since been expanded and edited. Copies have been distributed to each of the attendees.

**ACTIVITY REPORT**

1. Seminario sobre la Conservacion de Enerqia/Energy Conservation Seminar, Papers, January 1985.
2. Conclusions and Recommendations of the Latin America and Caribbean Regional Energy Conservation Seminar (Seminario sobre la Conservacion de Enerqia), March 29, 1985.

**KEY PERSONNEL**

- Hagler, Bailly & Company: Henri-Claude Bailly, President (5 days in Costa Rica); Alain Streicher, Vice President (4 days in Costa Rica); John Cable, Vice President (5 days in Costa Rica); Michael Fisher, Manager (4 days in Costa Rica); Gerald Schwinn, Associate (14 days in Costa Rica); Ana-Mari Carasso, Research Associate
- U.S. AID/Washington: Robert Archer, LAC/DR.

**EXPENDITURES**

(As of 3/31/85, based on labor costs incurred and invoices received):

	<u>Budget</u>	<u>This quarter</u>	<u>Cumulative</u>
Salaries	\$ 27,413	\$15,201	\$ 27,669
Fringe benefits	6,852	3,860	6,917
Overhead	32,553	18,051	32,857
Travel/trans./per diem	19,050	8,790	10,327
Other direct costs	11,950	18,760	20,332
Equipment	0	0	0
Subcontractor	0	0	0
<b>Total</b>	<b>\$ 98,818</b>	<b>\$64,603</b>	<b>\$ 98,103</b>
Fee	4,122	4,303	6,535
<b>GRAND TOTAL</b>	<b>\$102,000</b>	<b>\$68,906</b>	<b>\$104,638</b>

The Bureau for Latin America and the Caribbean has contributed \$50,000 to this project.

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**U.S. AID CONSERVATION SERVICES PROGRAM**  
(Contract Number: DAN-5728-C-00-3073-00)

**QUARTERLY ACTIVITY REPORT**  
(For period 1/1/85-3/31/85)

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**ACTIVITY:** Revision of the Energy Demand Management and Conservation Training Manual (Contract Task Area 5)

**COUNTRY:** Not country-specific

**START DATE:** 7/14/84

**COMPLETION DATE:** Ongoing

**BUDGET:** \$10,675

**QUARTERLY EXPENDITURES:** \$ 2,791

**CUMULATIVE EXPENDITURES:** \$13,283

**ST/EY MANAGER:** Pamela Baldwin

**HBC MANAGER:** Alain Streicher

**HBC REFERENCE:** 165

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**DESCRIPTION**

The purpose of this activity is to revise and to generalize for any or all developing countries the workbook on energy management techniques and equipment that was originally prepared for the Sri Lanka Energy Demand Management and Conservation Training Course (see QAR, 9/15/83-12/15/83). The course used an 800-page workbook to explain and illustrate the techniques and equipment necessary for energy management. The participants in this training session considered the manual to be particularly relevant to their day-to-day activities, and its successful application has led to the present activity. Final revisions to the manual have been made this quarter, and it is expected to be ready for distribution next quarter.

**ACTIVITY REPORT**

None.

**KEY PERSONNEL**

- Hagler, Bailly & Company: Alain Streicher, Vice President; Jean-Louis Poirier, Manager; Max Lopp, Associate; Bruce Appelbaum, Associate; Richard Smith, Associate.

**EXPENDITURES**

(As of 3/31/85, based on labor costs incurred and invoices received):

	<u>Budget</u>	<u>This quarter</u>	<u>Cumulative</u>
Salaries	\$ 1,531	\$ 266	\$ 2,329
Fringe benefits	383	66	582
Overhead	1,818	316	2,766
Travel/trans./per diem	0	0	20
Other direct costs	3,720	1,967	4,047
Equipment	0	0	0
Subcontractor	<u>2,597</u>	<u>0</u>	<u>2,708</u>
<b>Total</b>	<b>\$10,049</b>	<b>\$2,617</b>	<b>\$12,454</b>
Fee	<u>626</u>	<u>174</u>	<u>829</u>
<b>GRAND TOTAL</b>	<b>\$10,675</b>	<b>\$2,791</b>	<b>\$13,283</b>

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**U.S. AID CONSERVATION SERVICES PROGRAM**  
**(Contract Number: DAN-5728-C-00-3073-00)**

**QUARTERLY ACTIVITY REPORT**  
**(For period 1/1/85-3/31/85)**

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**ACTIVITY:** Organization and Planning of a Pakistan National  
Energy Conservation Center (Contract Task Area 6)

**COUNTRY:** Pakistan

**START DATE:** 9/8/84

**COMPLETION DATE:** Ongoing

**BUDGET:** \$275,000

**QUARTERLY EXPENDITURES:** \$ 91,200

**CUMULATIVE EXPENDITURES:** \$159,542

**ST/EY MANAGER:** Pamela Baldwin

**HBC MANAGER:** Henri-Claude Bailly

**HBC REFERENCE:** 168

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**DESCRIPTION**

The purpose of this ongoing activity has been to assist AID/Islamabad and the government of Pakistan in the planning of a proposed energy conservation center, which would be the focal point of a national energy conservation program. The ECSP staff has continued to provide analytical and technical support by preparing a microcomputer-based policy presentation on energy conservation, together with a policy proposal for a national energy conservation program (see QAR, 10/1/84-12/31/84).

During this quarter, Hagler, Bailly spent several weeks in Pakistan completing an economic model on the potential for energy conservation in the industrial and power sectors in Pakistan. This analysis was extended to include preliminary estimates of the energy conservation potential in the transport, buildings, and agricultural sectors. At the same time, a draft report on the proposed national energy conservation program, which includes the model, was prepared.

During February 1985, a presentation on the need for the national energy conservation program was made by Dr. Donor M. Lion, Mission Director, to the Pakistan Energy Policy Board. This presentation was based on the draft report. The Energy Policy Board established a working committee to review the proposed program. A

technical committee within the working committee reviewed the draft document, and its comments and suggestions were incorporated into the draft. It is anticipated that the working committee will meet during May 1985 to endorse the proposed program to the Energy Policy Board.

As recommended in the draft report, the proposed national energy conservation program would be sponsored by the Ministry of Planning & Economic Development with the support of several industrial, financial, and energy-related ministries of the Pakistani government. Implementing the program would be a newly-formed quasi-governmental organization, the National Energy Conservation Center (ENERCON). ENERCON would be comprised of representatives from both national and provincial government, public and private industry, trade associations, chambers of commerce and industry, and the buildings, transport, and agricultural sectors.

The program plan is comprised of six main components -- planning, data base development, technical support, training, outreach, and implementation. Program length is estimated at 8 years. The draft proposal details the following aspects of the program -- the background of Pakistan's energy supply and demand situation and current energy conservation efforts; the objectives of and rationale for the program in light of the energy supply imbalance; the program implementation plan, including program components, the role of ENERCON, and an implementation schedule; and overall investment requirements and sources of funds.

The report suggests that energy conservation can have significant impact on Pakistan's energy situation. From an analysis of the conservation potential in the industry and power sectors, Hagler, Bailly determined that an energy savings of approximately 12 million barrels of oil equivalent (boe) could be realized on a cumulative basis between now and the end of the Sixth Five-Year Plan. This savings is achievable through the use of economically and technologically feasible practices.

#### ACTIVITY REPORT

1. Development of a Model to Estimate Pakistan's Energy Conservation Potential, January 18, 1985 (draft discussion paper).
2. Presentation on Energy Conservation to the Energy Policy Board, by Dr. Donor M. Lion, Mission Director, February 11, 1985.
3. National Energy Conservation Program (Draft Discussion Paper), March 1985.

**KEY PERSONNEL**

- Hagler, Bailly & Company: Henri-Claude Bailly, President (13 days in Pakistan); Alain Streicher, Vice President (7 days in Pakistan); Charles Zimmermann, Associate; Bruce Appelbaum, Associate (47 days in Pakistan); Richard Smith, Associate (28 days in Pakistan)
- U.S. AID/Islamabad: Dr. Donor Lion, Charles Moseley, James Bever.

**EXPENDITURES**

(As of 3/31/85, based on labor costs incurred and invoices received):

	<u>Budget</u>	<u>This quarter</u>	<u>Cumulative</u>
Salaries	\$ 76,500	\$24,078	\$ 46,779
Fringe benefits	21,000	6,019	11,694
Overhead	92,800	28,594	55,551
Travel/trans./per diem	50,000	22,648	30,227
Other direct costs	10,000	4,162	5,324
Equipment	0	0	0
Subcontractor	<u>7,500</u>	<u>0</u>	<u>0</u>
<b>Total</b>	<b>\$257,800</b>	<b>\$85,504</b>	<b>\$149,578</b>
<b>Fee</b>	<u>17,200</u>	<u>5,695</u>	<u>9,963</u>
<b>GRAND TOTAL</b>	<b>\$275,000</b>	<b>\$91,200</b>	<b>\$159,542</b>

The AID mission in Islamabad will contribute \$250,000 to the project.

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**U.S. AID CONSERVATION SERVICES PROGRAM**  
**(Contract Number: DAN-5728-C-00-3073-00)**

**QUARTERLY ACTIVITY REPORT**  
**(For period 1/1/85-3/31/85)**

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**ACTIVITY:** Industrial Energy Conservation Program Evaluation  
(Contract Task Area 6)

**COUNTRY:** Dominican Republic

**START DATE:** 10/1/84

**COMPLETION DATE:** 2/28/85

**BUDGET:** \$20,000

**QUARTERLY EXPENDITURES:** \$ 1,768

**CUMULATIVE EXPENDITURES:** \$21,804

**ST/EY MANAGER:** Pamela Baldwin

**HBC MANAGER:** Alain Streicher      **HBC REFERENCE:** 169

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**DESCRIPTION**

In this activity, the ECSP staff participated in an evaluation of the Industrial Energy Conservation Program component of the Energy Conservation & Resource Development Project (see OAR, 10/1/84-12/31/84). The objectives of the assessment were to determine the soundness of the project and, where necessary, to make recommendations for changes that would ensure the project's success. The final report was completed this quarter after receiving the comments to the draft report by USAID/Santo Domingo, Fluor, and COENER.

**ACTIVITY REPORT**

1. Dominican Republic: Energy Conservation and Resource Development/Component 2: Industrial Energy Conservation Program (Final Evaluation Report), March 1985.

**KEY PERSONNEL**

- Hagler, Bailly & Company: Alain Streicher, Vice President; Robert Kowalski, Senior Consultant

- U.S. AID/Dominican Republic: Larry Armstrong, Energy Officer and Project Development Officer; William Smith, Chief of Engineering
- Dominican Republic: Ing. Jose Ramon Acosta, Head of COENER; Eduardo Maal, Resident Advisor (Fluor).

**EXPENDITURES**

(As of 3/31/85, based on labor costs incurred and invoices received):

	<u>Budget</u>	<u>This quarter</u>	<u>Cumulative</u>
Salaries	\$ 5,616	\$ 99	\$ 6,663
Fringe benefits	1,403	25	1,665
Overhead	6,669	118	7,913
Travel/trans./per diem	2,355	974	3,627
Other direct costs	1,250	441	579
Equipment	0	0	0
Subcontractor	<u>0</u>	<u>0</u>	<u>0</u>
<b>Total</b>	<b>\$17,293</b>	<b>\$1,657</b>	<b>\$20,442</b>
<b>Fee</b>	<u>1,513</u>	<u>110</u>	<u>1,361</u>
<b>GRAND TOTAL</b>	<b>\$20,000*</b>	<b>\$1,768</b>	<b>\$21,804</b>

The AID mission in Santo Domingo has contributed \$13,000 to this project.

\*Includes a 5-percent contingency.

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**U.S. AID CONSERVATION SERVICES PROGRAM**  
**(Contract Number: DAN-5728-C-00-3073-00)**

**QUARTERLY ACTIVITY REPORT**  
**(For period 1/1/85-3/31/85)**

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**ACTIVITY:** Regional Industrial Energy Efficiency Project Evaluation (Contract Task Area 6)

**COUNTRY:** Central America and Panama

**START DATE:** 10/1/84

**COMPLETION DATE:** 3/15/85

**BUDGET:** \$36,000

**QUARTERLY EXPENDITURES:** \$ 2,992

**CUMULATIVE EXPENDITURES:** \$37,415

**ST/EY MANAGER:** Pamela Baldwin

**HBC MANAGER:** Alain Streicher

**HBC REFERENCE:** 170

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**DESCRIPTION**

In this activity, the ECSP contract staff participated in an evaluation of the Regional Industrial Energy Efficiency Project of the Regional Office for Central America (ROCAP) (see QAR, 10/1/84-12/31/84). The final evaluation report was completed this quarter after receiving comments to the draft report made by ROCAP, ICAITI, SIECA, and Georgia Tech. The recommendations focused on improving project management by increasing participation among field engineers and national delegates in the planning process; clarifying the responsibilities of the various participants to avoid overlaps and conflicts; involving private consultants and engineering firms in energy audits, training, and project implementation; increasing the project's decentralization; increasing the technical staff; and providing training to the technical staff.

The evaluation concluded that the project has the potential to be successful, although the project's original quantitative energy saving goals are not likely to be met.

**ACTIVITY REPORT**

1. Regional Industrial Energy Efficiency Project: First Evaluation Final Report, February 1985.

**KEY PERSONNEL**

- Hagler, Bailly & Company: Alain Streicher, Vice President; Robert Kowalski, Senior Consultant
- U.S. AID/Washington: Robert Archer, LAC/DR
- USAID/ROCAP: Edward Nadeau, General Development Officer; David Chavez, General Development Officer; Gustavo Ruiz, Assistant Development Officer
- ICAITI: Lic. Francisco Aguirre, Ing. Ludwig Ingram  
Costa Rica -- Ing. Felix del Barco, Delegate  
El Salvador -- Ing. Jaime Gonzalez, Delegate  
Panama -- Ing. Celedonio Moncayo, Delegate  
Guatemala -- D. Ricardo Castillo, President of the Chamber of Industries  
Honduras -- Ing. Angel Porfirio Sanchez, Delegate
- Georgia Institute of Technology -- Mark Oven, Dr. Kenneth Maddock.

**EXPENDITURES**

(As of 3/31/85, based on labor costs incurred and invoices received):

	<u>Budget</u>	<u>This quarter</u>	<u>Cumulative</u>
Salaries	\$10,275	\$ 731	\$11,495
Fringe benefits	2,569	183	2,874
Overhead	12,201	867	13,650
Travel/trans./per diem	4,860	651	5,828
Other direct costs	1,650	373	1,231
Equipment	0	0	0
Subcontractor	<u>0</u>	<u>0</u>	<u>0</u>
<b>Total</b>	<b>\$31,555</b>	<b>\$2,805</b>	<b>\$35,078</b>
<b>Fee</b>	<u>2,765</u>	<u>186</u>	<u>2,336</u>
<b>GRAND TOTAL</b>	<b>\$36,000</b>	<b>\$2,992</b>	<b>\$37,415</b>

The AID Regional Office for Central America and Panama has contributed \$20,000 to this project.

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**U.S. AID CONSERVATION SERVICES PROGRAM**  
**(Contract Number: DAN-5728-C-00-3073-00)**

**QUARTERLY ACTIVITY REPORT**  
**(For period 1/1/85-3/31/85)**

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**ACTIVITY:** Djibouti Energy Initiatives Project Evaluation (Contract Task Area 6)

**COUNTRY:** Djibouti

**START DATE:** 11/30/84

**COMPLETION DATE:** 2/15/85

**BUDGET:** \$16,286

**QUARTERLY EXPENDITURES:** \$ 7,365

**CUMULATIVE EXPENDITURES:** \$17,225

**ST/EY MANAGER:** Pamela Baldwin

**HBC MANAGER:** Alain Streicher      **HBC REFERENCE:** 171

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**DESCRIPTION**

The purpose of this activity was to evaluate the Djibouti Energy Initiatives Project sponsored by AID (see QAR, 10/1/84-12/31/84). Started in 1981, the project was designed to reduce Djibouti's balance of payments burden by substituting alternative energy resources for oil imports.

In the draft report, Hagler, Bailly found that the potential for energy conservation in Djibouti was substantial, but virtually untapped. Three reasons were cited as probable causes for the country's inability to conserve energy:

1. Lack of awareness of conservation techniques in both the public and private sector
2. Lack of a technical ability in identifying weaknesses and implementing corrective measures
3. Lack of government support for conservation measures.

Several recommendations aimed at redirecting the project toward institutionalizing energy conservation awareness and capabilities were contained in the report. These are all low-cost measures and include short-term technical assistance (i.e., audits and

training), training in retrofitting techniques for technicians, overseas training for the directors of the national technical institutes and energy services, demonstration projects on retrofit prototypes, exhibitions on energy-efficient equipment and techniques, directory for energy-efficient products and services, promotional campaigns, norms for new construction, and methods of waste oil use.

Since the industrial sector in Djibouti is small and limited to non-energy-intensive activities, the potential for energy savings resides in the commercial and residential sectors. It was estimated that energy savings of approximately 25 percent could be attained in Djibouti, where waste is excessive despite high energy prices. This would save the country over \$5 million in energy expenditures, or 25,000 tonnes of oil equivalent annually.

During this quarter, meetings were held with AID/Washington to discuss the findings contained in the draft report on conservation and to incorporate these findings into the project evaluation report.

#### ACTIVITY REPORT

1. Djibouti Energy Initiatives: Mid-Term Evaluation/Conservation Component (Draft Report), January 1985.

#### KEY PERSONNEL

- Hagler, Bailly & Company: Alain Streicher, Vice President
- U.S. AID/Djibouti: John Lundgren, Energy Officer
- VITA/Djibouti: Stephen Hirsch
- Djibouti: Anis Abdallah, ISERST; Oblik Carton, Service de l'Energie.

#### EXPENDITURES

(As of 3/31/85, based on labor costs incurred and invoices received):

	<u>Budget</u>	<u>This quarter</u>	<u>Cumulative</u>
Salaries	\$ 3,924	\$1,042	\$ 4,420
Fringe benefits	981	261	1,105
Overhead	4,659	1,238	5,249
Travel/trans./per diem	4,894	4,095	5,105
Other direct costs	650	269	270
Equipment	0	0	0
Subcontractor	<u>0</u>	<u>0</u>	<u>0</u>
<b>Total</b>	<b>\$15,108</b>	<b>\$6,905</b>	<b>\$16,149</b>
<b>Fee</b>	<u>1,178</u>	<u>459</u>	<u>1,075</u>
<b>GRAND TOTAL</b>	<b>\$16,286</b>	<b>\$7,365</b>	<b>\$17,225</b>

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**U.S. AID CONSERVATION SERVICES PROGRAM**  
**(Contract Number: DAN-5728-C-00-3073-00)**

**QUARTERLY ACTIVITY REPORT**  
**(For period 1/1/85-3/31/85)**

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**ACTIVITY:** Haiti Fact-Finding Mission (Contract Task Area 6)

**COUNTRY:** Haiti

**START DATE:** 2/20/85

**COMPLETION DATE:** 12/31/85

**BUDGET:** \$11,500

**QUARTERLY EXPENDITURES:** \$10,947

**CUMULATIVE EXPENDITURES:** \$10,947

**ST/EY MANAGER:** Pamela Baldwin

**HBC MANAGER:** Alain Streicher

**HBC REFERENCE:** 173

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**DESCRIPTION**

During this quarter, Hagler, Bailly was asked to conduct a short fact-finding visit to Haiti, which was scheduled in conjunction with the development of the new action plan for the AID mission in Haiti. The findings of the visit were used for the preparation of the mission's action plan.

Haiti's energy situation is constrained by its use of traditional sources of energy, namely wood, charcoal, and bagasse. Its energy supply is highly dependent on the availability of these biomass fuels, which comprise almost 82 percent of the nation's total energy consumption. While the country's demand for commercial energy is growing rapidly, its energy supply is restricted by these less intensive and concentrated forms of energy. Despite these constraints, electrical consumption has grown at an average annual rate of 15 percent. Unfortunately, the extensive use of biomass is causing severe ecological problems -- i.e., deforestation, soil erosion, and excelled sedimentation. As a result, both the government and AID have targeted their efforts at increasing the efficiency of burning fuel wood, charcoal, and bagasse.

Based on a review of the work already undertaken in this area, the mission report made the following recommendations:

- Reduce the use of fuel wood in small distilleries (i.e., guildives), which are the most intensive users of biomass, consuming approximately 2,500 trees annually per employee. (This will require a detailed workplan that would identify potential areas for technology development such as simple instruments for measuring the efficiency of the distillation process.)
- Project industrial energy needs through the years 1993 and 2000 to forecast the energy requirements of the assembly export industry.
- Promote a program of industrial energy auditing in the manufacturing sector, where it is anticipated that an average energy savings of 15 percent could be achieved in fuel wood and commercial energy.

During the 9-day trip, approximately five on-site plant inspections were conducted as well as interviews with representatives from both the public and private sector.

#### ACTIVITY REPORTS

1. Haiti: Energy Efficiency in the Sugar and Manufacturing Industries -- Draft report on a fact-finding visit conducted between February 27 and March 7, 1985, March 25, 1985.

#### KEY PERSONNEL

- Hagler, Bailly & Company: Alain Streicher, Vice President (9 days in Haiti)
- Haiti private sector: M. Levy, Chamber of Industries; M. Dietz, La Minoterie d'Haiti; Carmelo A. Daidones, Le Cement d'Haiti S.A.M.
- Haiti, Ministry of Energy & Mineral Resources: Wilfrid St. Jean, Director of Energy Resources; Claude Delphin, Head, Planning; Clarence Kooi, consultant (ITSI); Margaret Barkley, consultant
- U.S. AID/Port-au-Prince: Lou O'Connor, Energy Officer; John Lewis, Agriculture Specialist; James Walker, Economist.

**EXPENDITURES**

(As of 3/31/85, based on labor costs incurred and invoices received):

	<u>Budget</u>	<u>This quarter</u>	<u>Cumulative</u>
Salaries	\$ 3,250	\$ 3,497	\$ 3,497
Fringe benefits	975	874	874
Overhead	4,014	4,153	4,153
Travel/trans./per diem	1,188	1,434	1,434
Other direct costs	650	303	303
Equipment	0	0	0
Subcontractor	<u>0</u>	<u>0</u>	<u>0</u>
<b>Total</b>	<b>\$10,077</b>	<b>\$10,261</b>	<b>\$10,261</b>
Fee	<u>897</u>	<u>683</u>	<u>683</u>
<b>GRAND TOTAL</b>	<b>\$10,974</b>	<b>\$10,944</b>	<b>\$10,944</b>