Folder Title:	Masood Ahmed - Chronological File - April to June 1984
Folder ID:	30450183
Series:	Sector and Operational energy and industry unit chronological files
Dates:	04/03/1984 - 06/29/1984
Subfonds:	Masood Ahmed files
Fonds:	Records of Individual Staff Members
ISAD Reference Code:	WB IBRD/IDA STAFF-19-02
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APR - JUN

1984

AHMED

WORLD BANK / INTERNATIONAL FINANCE CORPORATION

OFFICE MEMORANDUM

TO: Distribution

DATE: June 29, 1984

FROM: Masood Ahmed, Deputy Chief, EGYEA

SUBJECT: Proposed Presentation by W. S. Atkins Limited

1. W. S. Atkins Limited have expressed considerable interest in presenting the energy planning model ATPLAN to Bank staff. This model can be used to analyze both energy projects and overall sector developments. It can be run on a micro-computer as well as on a larger main frame system. Before accepting their offer I would like to find out whether there is wide enough interest in the model amongst the concerned Bank staff. To this end, I am attaching a brief description of the model that has been prepared by W. S. Atkins. Please let Mrs. Fernandes (Ext. 7-3996) know by July 15, if at all possible, whether you or your staff would be interested in attending the presentation on this, and if so, when this would be most suitable for you.

Attachment.

Distribution:

Messrs. Thiam (WAPEG); Wackman (EAPEG); Reekie (EMPPE); Beach (AEPEN); Moscote/Linder (LCPE1); Segura (INDD2); Lietard (INDD1); Saunders, Iskander, McCarthy, Bharier, Bates (EGY);

cc: EGYEA Staff

MAhmed:aaf.

ATPLAN - THE ATKINS PROCESS AND FINANCIAL MODELLING SYSTEM

ATPLAN is a computer modelling system which can be used to model a project, a business or even an economic sector. ATPLAN represents the flows of materials and resources between various processes and activities. ATPLAN has been used to build computer models ranging from a model of the steel sector in Venezuela through to detailed energy analysis for an industrial company. The modelling system represents the physical cost and financial aspects of the topic being studied. Thus for a project ATPLAN can examine its physical feasibility, forecast operating costs and determine project cash flows. Once the project is better defined ATPLAN can be used to examine the funding structure and forecast profit and loss accounts and balance sheets. Since ATPLAN is a modelling system it can be used to represent a problem in as much or as little detail as is necessary. Equally, like a child's construction kit, it can be used to represent a wide range of applications eg: natural gas flows throughout Europe, a truck factory or an oil refinery.

ATPLAN has been used for a number of energy applications, three of these are described below:-

1. ATPLAN was used for the International Energy Agency to study the effect of possible disruptions in gas supplies to IEA countries. Using ATPLAN we constructed computer models which simulated the main features of natural gas supply and demand networks so that the models might be used to investigate a wide range of disruptions in supply. Three models were constructed representing Western Europe, North America, and lastly the Pacific region. Models described natural gas supply sources, imports, storage facilities, pipelines and sectoral demands by area and country on a month by month basis for selected years up to the year 2000. Scenarios representing disruptions of supply of varying durations were investigated in order to assess the extent of the problems which might arise and the emergency actions that may be taken.

2. ATPLAN has been used to construct many different industrial models. In a study for the Brazilian steel-making company, COSIPA, we built an ATPLAN model of the steelworks to analyse hour by hour energy production and uses. Production strategies were revised and process changes evaluated in terms of their impact on the energy balance. The objective was to maximise the use of waste heat and by-product gas and to minimise the use of imported oil.

3. Atkins were commissioned by the UK Department of Energy to undertake a feasibility study concerning the space and water heating of domestic, commercial and institutional properties by a heat water pump from a combined heat and power station (CHP), the study examined the viability of such a scheme for districts in nine 'lead cities'. ATPLAN was used to undertake the financial analysis and determine the net present value of the schemes and their sensitivity to variations in capital costs, heat sales, discount rates etc.

ATPLAN can be useful in two distinct energy contexts; the analysis of alternative supply patterns for a given set of end user demands, and the determination of the demands for energy for a sector or industry given the desired product mix. The two can where appropriate, be directly integrated into one model. We intend to demonstrate both energy supply and demand models in our presentation to the World Bank

The major benefits of using ATPLAN are:-

- ATPLAN models are based on physical flows and processes, the parameters are recogniseable in the real world eg conversion efficiencies of plant and appliances.

- ATPLAN models are run interactively and alternative solutions can be quickly and easily examined. This, together with the first advantage means that considerable understanding of the real system can be built up in a short time.

- The same ATPLAN models can be used to check physical feasibility, determine product costs and forecast cash flows.

FORM NO. 27 - OCR
(3/82)

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MR. WUELFINGHOFF, NEDECO CONSULTING ENGINEERS, THE HAGUE, THE NETHERLANDS. (AAA) I REFER TO YOUR TELEX OF JUNE 25 REGARDING THE PROPOSED ESMAP STUDY ON A COAL IMPORT ACTION PLAN FOR KENYA. RE YOUR QUERY ONE. ALTHOUGH CIDA HAS EXPRESSED INTEREST IN COFINANCING THIS PROJECT, THE TIMING OF SUCH ARRANGEMENT IS STILL UNCERTAIN. CONSEQUENTLY, KENYAN GOVERNMENT AND OURSELVES WOULD BE INTERESTED IN ANY COFINANCING OFFERS FROM OTHER DONORS AS WELL. (BBB) RE YOUR QUERY TWO. OUR INTENTION IS FOR INHOUSE STAFF TO MANAGE THE STUDY SUPPLEMENTED BY CONSULTANTS AS REQUIRED, BUT THERE IS NO FIRM PREFERENCE AS TO WHETHER THOSE CONSULTANTS WOULD BE RECRUITED INDIVIDUALLY OR AS A FIRM. HOPE THE ABOVE INFORMATION IS USEFUL. REGARDS, MASOOD AHMED, DEPUTY CHIEF, ENERGY ASSESSMENTS DIVISION, WORLD BANK.

END OF TEXT

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CLASS OF SERVICE: TELEX | TELEX NO.: 31580 TEBO NL | DATE: 6/27/84

SUBJECT: ESMAP: Kenya Coal Import Act.

DRAFTED BY: MAhmed:aaf

EXTENSION: 73996

CLEARANCES AND COPY DISTRIBUTION: cc and cleared with Mr. Bharier (EGYEA)

AUTHORIZED BY (Name and Signature): Masood Ahmed, Deputy Chief, EGYEA

DEPARTMENT: Energy

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TEST NUMBER (FOR CASHIER'S USE ONLY) ☐☐☐☐☐☐☐☐☐

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BOOK OF THREE

1. MR. GECAU

   HEAD

   KENYA POWER AND LIGHT COMPANY

   NAIROBI, KENYA

   TELEX: 963-22253

2. MR. KARUGA

   MINISTRY OF POWER

   NAIROBI, KENYA

   TELEX: MINPOWER

3. MR. LOOS

   RMEA

   NAIROBI, KENYA

   TELEX: 22022

END OF TEXT →

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MR. GECAU, HEAD, KENYA POWER AND LIGHT COMPANY, NAIROBI, KENYA; COPY TO MR. KARUGA, MINISTRY OF POWER, NAIROBI, KENYA AND MR. LOOS, RMEA, NAIROBI, KENYA. RE KENYA POWER EFFICIENCY IMPROVEMENT PROJECT. FURTHER TO MR. BHARIER'S TELEX TO YOU OF JUNE 19, I AM PLEASED TO INFORM YOU THAT DANIDA HAS ALSO EXPRESSED INTEREST IN FUNDING THE KIPEVU STEAM PLANT REHABILITATION PROJECT AS DEFINED IN THE ESMAP PREFEASIBILITY REPORT. THE FUNDING TERMS WOULD BE THE STANDARD ONES FOR A DANISH DEVELOPMENT LOAN (25 YEAR LOAN WITH SEVEN YEAR GRACE; INTEREST FREE) AND THE PROCUREMENT WOULD BE TIED TO DANISH SUPPLIERS. IF YOU ARE INTERESTED IN PURSUING THIS MATTER, THE NEXT STEP WOULD BE TO MAKE A FORMAL REQUEST TO THE PERMANENT DANIDA MISSION IN NAIROBI WHERE MR. KLANS NYHOLM IS AWARE OF THE PROJECT. (BBB) TRUST THE ABOVE INFORMATION IS USEFUL. REGARDS, MASOOD AHMED, DEPUTY DIVISION CHIEF, ENERGY ASSESSMENTS DIVISION, WORLD BANK.

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CLASS OF SERVICE: TELEX

TELEX NO.: BOOK OF THREE

DATE: 6/22/84

SUBJECT: ESMAP: Kenya-Power Eff.Study

DRAFTED BY: MAhmed:aaf

EXTENSION:

CLEARANCES AND COPY DISTRIBUTION:
cc & cleared with Mr. Bharier (EGYEA)
Mr. Thomas (EAl) and
Mr. Wackman (EAP)

AUTHORIZED BY (Name and Signature): Masood Ahmed, Deputy Chief, EGYEA

DEPARTMENT: Energy

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BOOK OF TWO

1. MR. HANS HOEGH HENRICHSON

   PRESIDENT

   NORDIC PROJECT FUND

   C/O MR. ASDJOERN SVEEN

   SPECIAL REPRESENTATIVE

   MINISTRY OF COMMERCE AND SHIPPING

   OSLO, NORWAY

   TELEX:

2. MR. PETER LAURSEN

   NORDIC INVESTMENT BANK

   HELSINKI, FINLAND

   TELEX:

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CLASS OF SERVICE: TELEX	TELEX NO.: BOOK OF TWO	DATE: June 18, 1984
SUBJECT:	DRAFTED BY:	EXTENSION:
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THE PRESIDENT HOTEL, GABORENE, BOTSWANA. FOR YOUR GUEST MR. A. ARMAR. FOR YOUR INFORMATION I AM QUOTING TELEX SENT BY MR. WACKMAN TO BOTSWANA POWER CORPORATION. (AAA) QUOTE ATTENTION MR. E. D. BELL, CHIEF EXECUTIVE. REFERENCE MORUPULE POWER PROJECT (LN-2209-BT) YOUR LETTER 24 APRIL 1984 AND KENNEDY AND DONKIN REPORT ON REVIEW OF OPTIONS FOR SECOND STAGE DEVELOPMENT OF THE MORUPULE POWER PROJECT. THANK YOU FOR YOUR COMMENTS WHICH WE NOTE. WE SENT OUR COMMENTS ON THE TARIFF STUDY BY TELEX ON 1 MAY, 1984. WE WOULD LIKE TO DISCUSS THE K AND D REVIEW IN THE CONTEXT OF WIDER DISCUSSIONS ON THE DEVELOPMENT OF THE POWER SYSTEM WHICH WOULD INCLUDE THE MAJOR ISSUES RAISED IN THE TARIFF STUDY, SUCH AS DEMAND FORECAST, AND ALSO POSSIBILITIES FOR REGIONAL INTERCONNECTIONS. WE ARE PLANNING OUR NEXT SUPERVISION MISSION FOR MID-SEPTEMBER 1984, AND CONSIDER THAT IT WOULD BE OPPORTUNE TO INCLUDE THE PROPOSED DISCUSSIONS IN THAT MISSION. UNQUOTE. (BBB) RE ZIMBABWE. WHILE YOU ARE THERE PLEASE CHECK UP ON THE CURRENT STATUS OF IMPLEMENTATION FOR THE FOLLOW UP TO THE POWER LOSS REDUCTION STUDY. IS GOVERNMENT INTERESTED IN ANY ASSISTANCE TO HELP IMPLEMENT ANY OF THE STUDIES/PROJECTS IDENTIFIED BY THAT WORK? REGARDS, MASOOD AHMED, DEPUTY CHIEF, ENERGY ASSESSMENTS DIVISION, WORLD BANK.

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CLASS OF SERVICE: TELEX TELEX NO.: 2434-BT DATE: 6/5/84

SUBJECT: ESMAP: Botswana/Zimbabwe

DRAFTED BY: MAhmed:aaf. EXTENSION: 7-4545

CLEARANCES AND COPY DISTRIBUTION: cc & cleared with Mr. Bharier (EGYEA)

AUTHORIZED BY (Name and Signature): Masood Ahmed, Deputy Chief, EGYEA

DEPARTMENT: Energy

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BOOK OF TWO

MR. ZIAD ALAHDAD

UGANDA CLUB

KAMPALA, UGANDA TELEX 61010 UCB KAM

INTBAFRAD

KAMPALA, UGANDA TELEX c/o EADEVBANK 61074

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URGENT ATTENTION MR. ZIAD ALAHDAD, WORLD BANK STAFF. RE MALAWI SUPERVISION MISSION. YOU WILL HAVE RECEIVED YESTERDAY'S TELEX CLEARING YOUR MISSION TO MALAWI. HOWEVER, FURTHER DISCUSSIONS WITH MR. BOBE (EPD) SUGGEST THAT TIMING OF YOUR MISSION WOULD NOT BE OPPORTUNE AS LOCAL AND EXPATRIATE STAFF RECRUITMENT FOR ENERGY UNIT IS LIKELY TO BE DELAYED. WE ARE TRYING TO OBTAIN FURTHER CLARIFICATION BUT UNTIL THIS IS OBTAINED AND UNLESS YOU HEAR FURTHER FROM ME, YOU SHOULD NOT REPEAT NOT PROCEED TO MALAWI AS CURRENTLY SCHEDULED. INSTEAD UPON COMPLETION OF WORK IN UGANDA, YOU SHOULD RETURN DIRECTLY TO WASHINGTON. THIS WILL ALSO ENABLE YOU TO SPEND EXTRA TIME IN KAMPALA IF THIS WOULD BE USEFUL. BEST REGARDS, MASOOD AHMED, ACTING CHIEF, ENERGY ASSESSMENTS DIVISION, ENERGY DEPARTMENT, WORLD BANK.

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CLASS OF SERVICE: TELEX TELEX NO.: DATE: 6/13/84

SUBJECT: Malawi: Supervision Mission - ESMAP

DRAFTED BY: MAhmed:jl EXTENSION: 74545

CLEARANCES AND COPY DISTRIBUTION: Cl w & cc: Mr. Peter Hall (EA1DB)

AUTHORIZED BY (Name and Signature): Masood Ahmed, Acting Chief, EGYEA

DEPARTMENT: ENERGY

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MR. B. K. PRADHAN, WATER AND ENERGY COMMISSION, HMG, KATHMANDU, NEPAL. RE REQUEST FOR FOLLOW UP TO RECOMMENDATIONS MADE IN AUGUST, 1983 ENERGY ASSESSMENT REPORT. PROPOSE SENDING A MISSION UNDER UNDP/BANK ENERGY SECTOR MANAGEMENT ASSISTANCE PROGRAM (ESMAP) TO KATHMANDU BEGINNING JULY 2 FOR ABOUT A WEEK TO PREPARE A BRIEF STATUS REPORT WHICH (A) REVIEWS MAJOR ENERGY SECTOR DEVELOPMENTS SINCE THE ASSESSMENT, INCLUDING ACTIONS TAKEN TO IMPLEMENT SPECIFIC RECOMMENDATIONS, AS WELL AS ONGOING TECHNICAL ASSISTANCE ACTIVITIES OF MAJOR DONORS IN THE ENERGY SECTOR; AND (B) IDENTIFIES PRIORITIES FOR FURTHER TECHNICAL ASSISTANCE TO THE ENERGY SECTOR FOR FINANCING BY MAJOR DONOR AGENCIES. SOME OF THIS ASSISTANCE MAY BE FUNDED BY ESMAP WHICH, AS YOU MAY KNOW, PROVIDES TECHNICAL ASSITANCE ON A GRANT BASIS IN RESPONSE TO GOVERNMENT REQUESTS FOR ASSISTANCE TO IMPLEMENT THE RECOMMENDATIONS OF ENERGY ASSESSMENT REPORTS. PLEASE LET US KNOW SOON IF MISSION TIMING CONVENIENT. REGARDS, MASOOD AHMED, ACTING CHIEF, ENERGY ASSESSMENTS DIVISION, WORLD BANK.

END OF TEXT

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CLASS OF SERVICE: TELEX	TELEX NO.:	DATE: 6/13/84
SUBJECT: ESMAP: Nepal - EASR	DRAFTED BY: Matthew Mitchell:mr	EXTENSION: 7-4545
CLEARANCES AND COPY DISTRIBUTION: cc and cleared with G. ABDI, ASADC	AUTHORIZED BY (Name and Signature): MAhmed, Acting Chief, EGYEA	
	DEPARTMENT: Energy	
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THE WORLD BANK / INTERNATIONAL FINANCE CORPORATION

OFFICE MEMORANDUM

TO: Messrs. Bourcier, Rao, Saunders, McCarthy Dosik, Fish, Bauer (EGY)

Date: June 13, 1984

FROM: Masood Ahmed, Acting Chief, EGYEA

SUBJECT: EIS Management Information Formats

1. Attached is a set of proposed forms for the EIS-MIS system. These are to be discussed at a meeting of the EIS-MIS Task Force on Friday, June 15 at 10:30 a.m. If you have any comments on the forms relating to policy/ sector work/technical assistance/other output, please let me know before the meeting.

Attachment.

MAhmed:aaf.

OFFICE MEMORANDUM

TO: Mr. J. Lopez (PMD) DATE: June 13, 1984

FROM: Masood Ahmed, Acting Chief, EGYEA

SUBJECT: Office Administration Arrangements for EGYEA

1. I refer to your memorandum of June 11 to Mr. Bharier and to our telephone conversation this morning. As you know, dissatisfaction with existing office administration arrangements in the division was the major area of staff concern emerging from the recent attitude survey and we believe that a rapid and effective response to this concern is essential to improve the productivity and morale of both support and higher level staff. Mrs. Selehdar's secondment to act as office administrator for the division for a period of six months is in our view the most appropriate way of achieving this result and of improving the efficiency of the division's administrative arrangements. A draft statement of her duties and responsibilities is attached.

2. I would like to confirm that this secondment is intended to be a temporary measure. At the end of six months Mrs. Selehdar will produce a status report on the progress made in establishing effective office administration arrangements and we will then determine whether an office administrator position is required on a permanent basis. Should that be the case, we will, of course, prepare a full job description for such a position and select a suitable candidate to fill it by advertising in the VIS. Mrs. Selehdar would be eligible to apply for the position should she so desire.

3. I would also like to point out that from Mrs. Selehdar's point of view the proposed assignment would be an important asset in terms of furthering her career development and job prospects in the Bank by providing her with valuable administrative and supervising experience in the organization. As we discussed, she is looking forward to beginning this new assignment on June 18th.

4. I would very much appreciate your views and agreement on the proposed arrangements.

Attachment

Cleared with & cc: Mr. Rao (EGY)

cc: Messrs. Bharier (o/r), Bates (EGYEA)

MAhmed:ks

"OFFICE ADMINISTRATOR"

Agreed. This is a good arrangement.

13 June 1984

EGY[illegible] Office Au[illegible] - Duties and Responsibilities in Connection with Review and Development of Office Systems

1. Support Staff (Secretaries, Staff Assistants and Word Processors)

a) Identify requirements for support level staff and recommend on selection of new and fixed-term support staff in consultation with managers and higher level staff.

b) Manage delivery of necessary support; supervise support level staff.

c) Monitor and evaluate the work of support staff, complete Supplementary Evaluation Section of the AER/PPF; provide any interim evaluation required by PMD or division managers.

d) Certify needs for special training and arrange for delivery of training; provide on-the-job coaching as needed.

e) Manage Overtime and Temporary Staff budget and confer with division managers on specific requirements.

f) Develop and manage a program to handle support requirements during staff absences; develop work-hours and leave scheduling system.

2. Office Procedures

Determine routine and recurring support tasks required for effective divisional support system and allocate responsibilities. [Set up a task/responsibility matrix.]

3. Document Production, Quality Control and Distribution

a) Identify work flow projections and develop a plan for ensuring timely production, including processing, arrangements for maps and charts, and printing.

b) Develop and implement quality control procedures for document production, including word processing, format and proofreading.

c) Develop, automate and maintain internal and external distribution lists and procedures to ensure the timely distribution of reports, including the handling of standard covering memos and letters in collaboration with divisional managers. Assume responsibility for maintaining document storage and inventory.

4. Space Planning and Allocation

a) Identify divisional space requirements for professional and support staff, for proper maintenance of supplies, documents etc., and for office automation equipment. Propose plans for meeting these requirements and, with the approval of the Division Chief, liaise with Departmental and Bank administrative units as required.

b) Determine best utilization of existing space, including the allocation of rooms to consultants and/or temporary staff.

5. Office Automation

Develop and maintain an inventory of existing office equipment in use in the division; identify needs for additional equipment and propose plans for acquisition; develop procedures for use of equipment which must be shared; develop and arrange training programs for staff at all levels.

6. Weekly Bulletin

Develop and implement system to keep staff informed on a regular basis with staff lists, travel and leave schedules, meetings and seminars, consultants in house, and other information as appropriate.

7. Major Translations

Develop and implement system for forecasting major translations and the processing implications for production.

# # # # #

OFFICE MEMORANDUM

TO: Mr. G. McBride, EA1DA

DATE: June 11, 1984

FROM: Masood Ahmed, Acting Chief, EGYEA

SUBJECT: Request for Information from the Italian ED's Office

1. As I mentioned to you on the phone earlier today, Mr. Rocca from the Italian ED's office called me at noon today to ask for some information on wood availability and pricing in Kenya. He wanted this information in connection with a proposed IFC Pulp and Paper project in Kenya which is apparently being presented tomorrow. His specific concerns were:

(a) the Kenyan Government's pricing strategy for wood and wood products;

(b) the impact of the additional wood use by the proposed project on the supply/demand balance in the country and whether the project would cause significant additional pressure on wood supply and deforestation.

2. At your suggestion, I called Mr. Neil Wilke (EAPCA) to ask him to respond to Mr. Rocca on these questions. He passed me on to Mr. Brouard who deals with forestry issues in Kenya. I explained the background to Mr. Brouard and we agreed that Mr. Brouard would:

(a) call Mr. Rocca today to ascertain his specific questions/ concerns;

(b) provide Mr. Rocca with any information on these questions that was available or could be obtained in the time available;

(c) brief the relevant IFC staff on the subject.

I have since called Mr. Rocca's office to inform him that Mr. Brouard will handle the matter.

cc: Messrs. Brouard (EAP), Dunn (EA1), Rao (EGY)
Ms. Marshall (EAP)

MAhmed:ks

THE WORLD BANK/INTERNATIONAL FINANCE CORPORATION

OFFICE MEMORANDUM

To: EGYEA Staff

Date: June 11, 1984

From: Masood Ahmed, Acting Chief, EGYEA

Subject: Divisional Objectives

1. Attached is the revised draft of the division's objectives which we need to finalize during this week. To this end, I would like us to meet on Tuesday morning, June 12, at 10:00 a.m. in Room D-458 to review this draft before it is finalized.

Attachment.

MAhmed:aaf

DRAFT
4/26/84
GG

ENERGY ASSESSMENT DIVISION
OBJECTIVES AND OPERATIONS PROGRAM FY84

GENERAL

The Energy Assessment's 1984 FY objectives are framed to achieve consistency within the Energy Department's stated overall objectives on energy policy and country strategy.

More specifically, the Division's objectives focus sharply on the following Energy Department goal, quote;

> "To provide direct assistance to member countries in the formulation and management of appropriate energy sector strategies and in the mobilisation of the necessary financial and human resources."

Divisional Objectives

Within the context of both Bank and Energy Department goals, the principal objective of the Energy Assessment Division is to provide developing countries with technical and managerial assistance in preparing and implementing strategies in the energy sector. The Division aims to achieve this key objective by:

* the prepartion of energy assessment reports which are an integrated and rapid diagnoses of key issues and options in the energy sector and which provide clear and practical recommendations for action on policy, investment and institutional issues;

* the function of small-scale and fast responding technical and managerial assistance to these countries to help them resolve the problems identified in the assessment reports.

Other objectives of the Division's work are to provide the Bank and other donor agencies with a framework for developing their own energy assistance strategies for developing countries.

For FY84 specific objectives are:

* to complete assessment work in 16 countries;

* to begin assessment work in 14 countries;

* to provide assistance to about 15 governments in following up the recommendations of the energy assessment reports.

Country Strategy: Direct Assistance to Countries

Member Governments

An important objective will be to ensure that member governments are informed of the progress of the Energy Sector Assessment Programme and Energy Sector Management Assistance Programme; as requested, and where possible, to provide advice and access to the division's expertise. In particular all assessment missions will be preceded by a reconnaissance mission which

explains the assessment process, identifies the major issues to be tackled and obtains the government's commitment to the assessment. Further, aide memories or briefings will be left with governments at the end of assessment missions and the draft report will be thoroughly discussed with them before it is issued in its final form.

Energy Assessment Programme: Objectives

To meet commitments to UNDP of producing 69 assessments for the period Jan 1981-Dec 1985 at the rate of approximately 12 per year. Further, for each assessment to provide practical recommendations in the following areas:

* encouraging procurement of fuels at the lowest cost, including, where appropriate, greater production from economically viable indigenous energy sources;

* encouraging greater efficiency in the use of energy through appropriate pricing and other policies;

* establishing an agreed strategy with the government including technical assistance and investment priorities in the energy sector;

* providing a framework for multilateral and bilateral technical assistance in the sector.

Energy Sector Management Assistance Programme (ESMAP): Objectives

To develop quality activities that will provide a rapid and flexible response to governments who request assistance in implementing the policy, planning, and institutional recommendations of the Energy Assessments Reports. Except in special circumstances each activity under ESMAP shall not exceed $100,000.

Preparation of the programme will take into account the possibility that considerably higher levels of incoming funds are likely to be available. During FY84 an additional objective will be to develop a pipeline of projects for future availability of funds. Quality control of both programs will be increased through "peer group review" to ensure high quality reporting standards.

Unilateral and Bilateral Aid Agencies:

The division will avoid duplication of work carried out under bilateral and multilateral programs; rather it will provide a foundation for and build upon the work of such agencies. The division's work, when finalized will be made available to these agencies so they can take into account country

energy strategies and pre-feasibility work when designing their own future assistance programs. When requested (and compensated) the division is prepared to manage the energy technical assistance of such agencies as well as to brief or organize donor meetings on specific countries.

Donor Governments and Agencies:

Donors to divisional programs will be:

- provided with timely progress reports;

- provided with appropriate financial statements on budgetary allocations;

- informed of any programme event that could affect donor fund contributions;

- asked to provide resumes of potential consultants to be selected and pre-interviewed by divisional staff for work under the division's programs.

When requested staff the division will assist UNDP in mobilizing additional resources for funding the division's programs.

Internal Bank Operations

The following objectives strive to achieve the formulation of a coherent Bank strategy for energy operations in a country:

* To ensure the utmost coordination and cooperation with all Bank operational departments. In the case of the regions, this is being done, and will be done, by regular work program meetings which use the bimonthly status reports of the Division as an agenda; in the case of other COPD through ad hoc meetings on, for example, conservation, coal, refineries, etc. With respect to the Service Departments the division expects to receive prompt and sensible assistance when requested, and will try to encourage this.

* To ensure that divisional objectives are consistent with and supportive of department objectives by providing divisional staff with feedback from senior staff meetings and by providing senior staff with full information on work programs and budgets. In addition, to ensure that all divisional reports including draft yellow cover assessment reports, pre- and post-mission issues papers, activity initiation reports, are reviewed and approved by the Front Office staff before further distribution.

Internal Management Objectives

Responsibilities:

To give staff the maximum responsibility consistent with their experience and abilities in the areas of mission leadership, quality control, work programming, etc., and to provide the support and motivation for staff to increase their capacity to take on new responsibilities.

Performance Evaluation:

To review staff performance on a regular basis to clearly define an individual's objectives and provide feedback on performance and levels of achievement, further, to ensure renumeration and status are commensurate with individual contribution towards divisional objectives. For FY84 a specific objective will be to introduce the new performance planning and planning review system.

Training:

To provide training so as to enhance staff effectiveness in carrying out assigned tasks as well as to enhance the staff member's career development prospects.

Staff Recruitment:

An important objective will be to maintain the high calibre of staff in the Division. Since the work programme of the Division is, and will continue, to change over time, new staff as a general rule will be hired on a fixed term of 2-3 years duration. A major objective will be to ensure that the mix of technical, economic and financial capabilities will be appropriate for producing high quality energy sector assessments and for managing follow-up technical assistance and pre-feasibility work.

Consultants:

To ensure that the highest quality specialists are retained for the Energy Assessment and ESMAP. Screeing of resumes and interviews before engaging them is an important aspect of this process. Other important aspects are careful supervision of their work and evaluation of the results achieved by them. A specific objective for the first half of FY84 is the installation of a computer-based roster, selection and evaluation system.

Support Staff:

To ensure high quality support staff are selected to meet divisional needs. Specific targets for FY84 are to recruit staff that will ensure:

* effective and efficient word processing facility;
* a quality control and production system;
* an editorial system.

Communications:

To ensure cohesive team work and a high level of objective achievement by staff, communications will be facilitated through regular divisional meetings, retreats and small groups to review assessment reports and ESMP activity.

Administration:

The key objective will be to continuously monitor the various Bank, and UNDP budgets, and the overall work program so as to ensure that targets are achieved. Where necessary the administration will provide early advice of potential target shortfalls.

OPERATIONAL PROGRAM FY 84

Energy Assessment Program

The operational program for the Energy Assessment Programme over FY84 is shown in Annex I.

Energy Sector Management Assistance Program

The operational program for the ESMAP over FY84 is shown in Annex II.

Annex I

JOINT UNDP/WORLD BANK ENERGY SECTOR ASSESSMENTS

Blue Covers Completed	Main Mission Completed	Reconnaissance Mission Completed	Reconnaissance in next three months
Bangladesh	Benin	Jamaica	Burma
Bolivia	Botswana		Mali
Burundi	Cape Verde		Madagascar
Costa Rica	Ethiopia		Thailand
Fiji	Guinea-Bissau		*Tonga
Gambia	Ivory Coast		Upper Volta
Haiti	Liberia		*Vanuatu
Indonesia	Mauritania		*Western Samoa
Kenya	Morocco		
Lesotho	Niger		
Malawi	Paraguay		
Mauritius	Portugal		
Nepal	St. Lucia		
Nigeria	St. Vincent		
Papua New Guinea	Tanzania		
Peru	Togo		
Rwanda	Yemen AR		
Senegal			
Seychelles			
Solomon Islands			
Sri Lanka			
Sudan			
Turkey			
Uganda			
Zambia			
Zimbabwe			
Total 26	17	1	8
Cumulative (26)	(43)	(44)	(52)

* Will be main missions only.

March 1, 1984

ENERGY ASSESSMENTS
STATUS REPORT AND WORK PROGRAM FOR EAST AFRICA

COUNTRY	PRINCIPAL STAFF INVOLVED			STAGE COMPLETED	FY84				FY85								COMMENTS OR MAJOR CHANGES SINCE LAST REPORT
	EGYEA	PROJECTS	PROGRAMS		MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	
BOTSWANA	*Armar Mian	Dyson	Morris	(6)	7,8	9	10										
COMOROS	*Schmedtje			(0)							1,2	3	4	5		6	
ETHIOPIA	*Wackman Newcombe Boroumand	Killoran Besant-Jones	Codippily	(9)			10										
MADAGASCAR	*Schmedtje Russell (Cons)	Grut Stephenson	McGibbon	(0)	1	2	3		4	5		6	7	8	9	10	
MOZAMBIQUE	*Liebenthal			(0)											1	2	Mission subject to confirmation of Government interest.
SOMALIA	*Richter	Postvedt	Sharma	(1)					2	3	4	5		6	7	8	
SWAZILAND	*Schmedtje			(0)							1,2	3	4	5		6	Special funds received under small country program.
TANZANIA	*Bates Kiwana	Poncia Schramm	Anderson	(6)	7,8	9	10										
ZAIRE	*Ferroukhi			(0)									1	2	3	4	Mission timing subject to discussions with Region and Government commitment.

COUNTRY	COMPLETED ASSESSMENTS
BURUNDI	Blue Cover 6/82.
KENYA	Blue Cover 5/82.
LESOTHO	Blue Cover 2/84.
MALAWI	Blue Cover 8/82.
MAURITIUS	Blue Cover 12/81.
RWANDA	Blue Cover 8/82.
SEYCHELLES	Blue Cover 2/84.
SUDAN	Blue Cover 7/83.
UGANDA	Blue Cover 7/83.
ZAMBIA	Blue Cover 1/83.
ZIMBABWE	Blue Cover 6/82.

OTHER COUNTRIES	
DJIBOUTI	To be carried out in FY85 but staffing and timing to be determined in conjunction with another operation to minimize cost.

* Mission Leader

Assessment Report Stages

1. Desk Study
2. Reconnaissance
3. Pre Mission Issues Paper
4. Mission
5. Post Mission Issues Paper
6. White Cover
7. Yellow Cover
8. Green Cover
9. Discussion with Government
10. Blue or Grey Cover

March 1, 1984

ENERGY ASSESSMENTS
STATUS REPORT AND WORK PROGRAM FOR WEST AFRICA

COUNTRY	PRINCIPAL STAFF INVOLVED			STAGE COMPLETED	FY84				FY85								COMMENTS OR MAJOR CHANGES SINCE LAST REPORT
	EGYEA	PROJECTS	PROGRAMS		MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	
BENIN	*Weimper	Wilton Fishwick Ohbi	Kuoh	(5)	6,7	8	9	10									
CAPE VERDE	*Liebenthal	Wilton Freeman	Gil	(5)	6	7	8	9	10								Small country program.
CONGO	*Ferroukhi			(0)				1		2	3	4	5		6	7	
GUINEA	*Craig	Thiam	Cadario	(0)								1	2	3	4	5	Mission timed for completion of Power Master Plan and to coordinate with Regional Power Sector Note.
GUINEA-BISSAU	*Liebenthal	Wilton Fishwick	Gil	(5)	6,7		8	9	10								Small country program.
IVORY COAST	*Ferroukhi Perine	Khelil	Mendoza	(4)	5		6	7	8		9	10					
LIBERIA	*Newcombe Ansari	Mena	Kendall	(4)	5		6	7	8		9	10					
MALI	*Weimper Craig			(0)	1	2	3		4	5		6	7	8	9	10	
MAURITANIA	*Richter	Gorse Ouahes	Larrecq	(5)		6	7	8		9	10						
NIGER	*Schmedtje King	Gorse Rochet	Cervais	(9)	10												
TOGO	*Weimper	Wilton Hansen Wijetilleke	Triche	(5)	6,7	8	9	10									
UPPER VOLTA	*Weimper Craig			(0)	1	2	3		4	5		6	7	8	9	10	

COUNTRY	COMPLETED ASSESSMENTS
GHANA	Green Cover 3/81.
SENEGAL	Blue Cover 7/83.
NIGER	Blue Cover 2/84.
NIGERIA	Blue Cover 8/83.
GAMBIA	Blue Cover 11/83.

OTHER COUNTRIES	
CAMEROON	Government request received; introductory report available; candidate for FY86 if Govt. commitment confirmed. Petroleum subsector work being done by consultants.
CENTRAL AFRICAN REPUBLIC	Government request received. Unscheduled.
GHANA	Reconnaissance scheduled for late FY85.
SAO TOME & PRINCIPE	Candidate for FY85 if resources available.
SIERRA LEONE	Reconnaissance scheduled for late FY85.

* Mission Leader

Assessment Report Stages

1. Desk Study
2. Reconnaissance
3. Pre Mission Issues Paper
4. Mission
5. Post Mission Issues Paper
6. White Cover
7. Yellow Cover
8. Green Cover
9. Discussion with Government
10. Blue or Grey Cover

March 1, 1984

ENERGY ASSESSMENTS
STATUS REPORT AND WORK PROGRAM FOR EMENA

COUNTRY	PRINCIPAL STAFF INVOLVED			STAGE COMPLETED	FY84				FY85								COMMENTS OR MAJOR CHANGES SINCE LAST REPORT
	EGYEA	PROJECTS	PROGRAMS		MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	
MOROCCO	*Hughart		Haes	(9)	10												
PORTUGAL	*Schaedtje Mitchell	Johnson Yucel	Lazar	(9)	10												
Y.A.R.	*Jechoutek Kraske	Vedavalli	Khenissi	(8)		9	10										

COUNTRY	COMPLETED ASSESSMENTS
JORDAN	Grey cover sector report completed by Region 11/82.
TURKEY	Blue Cover 2/83.

OTHER COUNTRIES	
TUNISIA	Reconnaissance expected in late FY85 with main work in FY86.

* Mission Leader

Assessment Report Stages

1. Desk Study
2. Reconnaissance
3. Pre Mission Issues Paper
4. Mission
5. Post Mission Issues Paper
6. White Cover
7. Yellow Cover
8. Green Cover
9. Discussion with Government
10. Blue or Grey Cover

March 1, 1984

ENERGY ASSESSMENTS
STATUS REPORT AND WORK PROGRAM FOR LAC

COUNTRY	PRINCIPAL STAFF INVOLVED: EGYEA	PROJECTS	PROGRAMS	STAGE COMPLETED	FY84: MAR	APR	MAY	JUN	FY85: JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	COMMENTS OR MAJOR CHANGES SINCE LAST REPORT
ARGENTINA	*Mian Sanchez-Sierra		Nissenbaum	(0)						1		2	3	4	5		Government commitment to be confirmed.
ECUADOR	*Liebenthal Bachrach	Barbu Dobiach	Belli	(0)						1		2	3	4	5		Government request received.
DOMINICAN REPUBLIC	*Zinman	Poncia	Scheffold	(0)				1	2	3	4	5		6	7	8	
JAMAICA	*Mian Gaskin		Bernard	(3)		4	5		6	7	8	9	10				
PARAGUAY	*Zinman Sanchez-Sierra Bachrach	Bertelsmeier	Zea	(5)	6	7	8		9	10							
EASTERN CARIBBEAN (Stage I) St. Lucia, St. Vincent	*Mian	Larrieu	Kanchuger	(6)	7	8	9	10									
EASTERN CARIBBEAN (Stage II) Grenada St. Kitts	*Bates	Larrieu	Kanchuger	(0)				1			2	3	4	5		6	Government requests received. Final decision on mission leader to be made later.
EASTERN CARIBBEAN (Stage III) Dominica Antigua Montserrat	*Bates	Larrieu	Kanchuger	(0)				1					2	3	4	5	Government requests received. Final decision on mission leader to be made later.

COUNTRY	COMPLETED ASSESSMENTS
BRAZIL	Grey Cover 12/82.
BOLIVIA	Blue Cover 4/83.
CARIBBEAN	Grey Cover 5/79.
COSTA RICA	Blue Cover 2/84.
HAITI	Blue Cover 6/82.
PANAMA	Grey Cover 8/80.
PERU	Blue Cover 2/84.

OTHER COUNTRIES	
COLOMBIA	Candidate for late FY85 or for FY86.
MEXICO	Candidate for reconnaissance in late FY85 if resources available and Government request received. Desk Study already prepared.
URUGUAY	Government request received; candidate for FY86.
REGIONAL ISSUES IN CARIBBEAN REPORT	Expected November 1984.

* Mission Leader

Assessment Report Stages

1. Desk Study
2. Reconnaissance
3. Pre Mission Issues Paper
4. Mission
5. Post Mission Issues Paper
6. White Cover
7. Yellow Cover
8. Green Cover
9. Discussion with Government
10. Blue or Grey Cover

March 1, 1984

ENERGY ASSESSMENTS

STATUS REPORT AND WORK PROGRAM FOR EAST ASIA

COUNTRY	PRINCIPAL STAFF INVOLVED			STAGE COMPLETED	FY84				FY85								COMMENTS OR MAJOR CHANGES SINCE LAST REPORT
	EGYEA	PROJECTS	PROGRAMS		MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	
THAILAND	*Sadove Boroumand Tillman	Daffern	Davar Kumar	(1)	2	3					4		5		6	7	Mission for work on rural energy subsector already in field.
SOUTH PACIFIC Tonga Vanuatu Western Samoa	*Prasad (Cons.) Kiwana		Berlin	(3)		4	5	6	7	8	9	10					Additional UNDP resources received.

COUNTRY	COMPLETED ASSESSMENTS
INDONESIA	Blue Cover 11/81.
PAPUA NEW GUINEA	Blue Cover 7/82.
PHILIPPINES	Grey Cover 2/82.
FIJI	Blue Cover 6/83.
SOLOMON IS.	Blue Cover 6/83

OTHER COUNTRIES	
CHINA	First stage of sector work completed as part of first Economic Report. Background sector work being conducted for second Economic Report (Taylor).

* Mission Leader

Assessment Report Stages

1. Desk Study
2. Reconnaissance
3. Pre Mission Issues Paper
4. Mission
5. Post Mission Issues Paper
6. White Cover
7. Yellow Cover
8. Green Cover
9. Discussion with Government
10. Blue or Grey Cover

March 1, 1984

ENERGY ASSESSMENTS
STATUS REPORT AND SCHEDULE FOR SOUTH ASIA

COUNTRY	PRINCIPAL STAFF INVOLVED			STAGE COMPLETED	FY84				FY85								COMMENTS OR MAJOR CHANGES SINCE LAST REPORT
	EGYEA	PROJECTS	PROGRAMS		MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	
BURMA	*Decaux (Cons.) Luthra (Cons.) Taylor		Teantie	(1)		2	3	4	5		6	7	8	9	10		Government interest confirmed.

COUNTRY	COMPLETED ASSESSMENTS
BANGLADESH	Blue Cover 10/82.
PAKISTAN	Grey Cover 6/80.
SRI LANKA	Blue Cover 5/82.
NEPAL	Blue Cover 8/83.

OTHER COUNTRIES	
PAKISTAN	Candidate for FY86 or FY85 if resources become available.
INDIA	Energy work focusses on conservation.

* Mission Leader

Assessment Report Stages

1. Desk Study
2. Reconnaissance
3. Pre Mission Issues Paper
4. Mission
5. Post Mission Issues Paper
6. White Cover
7. Yellow Cover
8. Green Cover
9. Discussion with Government
10. Blue or Grey Cover

March 1, 1984

Annex II

ESMP Resource Requirements

	1984	1985	1986	1987
Assessment Status Reports				
Numbers	15	12	12	12
Unit Costs $000	20	22	24	26
Budget $000	300	265	290	310
Preinvestment Work				
Regular				
(i) Power Efficiency Audits	6	8	8	8
Unit Costs $000	60	65	70	75
Budget $000	360	520	560	600
(ii) Others	12	21	34	34
Unit Costs $000	40	45	50	55
Budget $000	480	945	1,750	1,925
Large				
Numbers	6	7	8	8
Unit Costs $000	300	325	350	400
Budget $000	1,800	2,275	2,800	3,200
Total Preinvestment				
Numbers	24	36	50	50
Budget $000	2,640	3,740	5,110	5,725
Management and Policy Support				
Numbers	15	24	30	30
Unit Costs $000	40	45	50	55
Budget $000	600	1,080	1,500	1,650
TOTAL ESMP				
Numbers	54	72	92	92
Budget $000	3,540	5,085	6,900	7,685
Rounded to $ million	3.5	5.0	7.0	8.0

ESMP: Proposed Work Program
(Back up Table No. 7)

Regular Pre-investment and Management Assistance
Activities Proposed for 1984 1/

The program will undertake about twelve pre-investment activities and about 15 management and policy support activities. Most of these will be selected from the 23 activities listed below which have already been identified as having a high priority. However, given the nature of the program other activities may be added or substituted as they are identified during the course of the year.

(i)	Botswana:	Prefeasibility study of the technical and economic evaluation of a power interconnection with Zimbabwe via a high tension line from Salibi-Phikwe to Bulawayo.
(ii)	Botswana:	Preparation of a Solar Water Heating Technical Assistance and Investment Package.
(iii)	Botswana:	Definition of Staffing, Training and Equipment needs of Energy Unit in MMRWA.
(iv)	Bolivia:	Assistance for developing Linear Programming Model for Refinery Optimization.
(v)	Burundi:	Preparation of Technical Assistance Package to introduce improved charcoal kilns.
(vi)	Burundi:	Preparation of Peat Utilization Project for small industries.
(vii)	Gambia:	Management Assistance for Streamlining Petroleum Import and Distribution Arrangements.
(viii)	Gambia:	Prefeasibility of Solar Water Heating Package of major hotels and brewery.
(ix)	Haiti:	Prefeasibility of project for efficient utilization of bagasse.
(x)	Kenya:	Assistance for the preparation of a Solar Water Heating Project.
(xi)	Kenya:	Preparation of an action plan for coal conversion and imports.

(xii)	Mauritius:	Preparation of Energy Conservation Program for hotels and public sector buildings.
(xiii)	Mauritius:	Assistance for Streamlining Petroleum Import and Distribution Arrangements.
(xiv)	Rwanda:	Preparation of Program to introduce improved charcoal stoves and production kilns.
(xv)	Sri Lanka:	Preparation of Transport Sector Conservation Program.
(xvi)	Sri Lanka:	Preparation of Terms of Reference, evaluation criteria and implementation schedule for feasibility studies of energy efficiency improvement projects in 30 large industrial corporations.
(xvii)	Sri Lanka:	Preparation of Solar Water Heating Package for hotels and commercial users.
(xviii)	Uganda:	Preparation of Parastatal Transport Sector Energy Efficiency Improvement package.
(xx)	Uganda:	Assistance for streamlining petroleum supply arrangements.
(xxi)	Zambia:	Definition of Staffing, Training and Technical Assistance Requirements for the Ministry of Energy.
(xxii)	Zimbabwe:	Assistance for establishing Planning, Management and Budgeting Systems in ZESA.
(xxiii)	Zimbabwe:	Definition of Industrial Energy Efficiency Package.

1/ Excludes Power Sector Efficiency Audits and potential co-financing operations.

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PAGE 1 OF 1

OFFICIAL DEPT/DIV ABBREVIATION: EGYEA

MESSAGE NUMBER

TEST NUMBER (FOR CASHIER'S USE ONLY)

START HERE

MR. LARRY KOHLER, FOCAL POINT FOR ENERGY, ILO, GENEVA, SWITZERLAND. PLEASED TO INFORM YOU THAT DUTCH CONTRIBUTION OF DOLLARS 75,000 TO ETHIOPIA COOKSTOVE PROJECT NOW CONFIRMED AND ON THIS BASIS WE CAN NOW ACTIVATE PROJECT PREPARATION/IMPLEMENTATION. KEN NEWCOMBE WILL FOLLOW UP ON DETAILS OF PROJECT SCOPE, BUDGETING, ETC. UPON HIS RETURN FROM ADDIS ABABA END OF THIS WEEK. HOWEVER, IN THE MEANTIME WE CAN GO AHEAD WITH NECESSARY STAFFING ARRANGEMENTS. GLAD THAT THIS IMPORTANT PROJECT FINALLY ALL SET TO GO. BEST REGARDS.

MASOOD AHMED, ENERGY DEPARTMENT, WORLDBANK

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INFORMATION BELOW NOT TO BE TRANSMITTED

CLASS OF SERVICE: TELEX | TELEX NO.: 845-22271 | DATE: June 11/84

SUBJECT: Ethiopia: Cookstove Proj.

DRAFTED BY: MAhmed:ks | EXTENSION: 7-4545

CLEARANCES AND COPY DISTRIBUTION:

cc: K.Newcombe, EGYEA (o/r)

AUTHORIZED BY (Name and Signature): Masood Ahmed, Acting Chief, EGYEA

DEPARTMENT: ENERGY

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THE WORLD BANK/INTERNATIONAL FINANCE CORPORATION

OFFICE MEMORANDUM

To: Mr. Julian Bharier, Chief, EGYEA

Date: June 8, 1984

From: Masood Ahmed and Matthew Mitchell, EGYEA

Subject: ESMAP: Energy Assessment Status Report
Indonesia: Back to Office Report

1. In accordance with our terms of reference we visited Jakarta from May 7-17 1/ to prepare the above report which describes the progress made in implementing the recommendations of the 1981 Energy Assessment and identifies priority areas for follow up technical assistance under the Energy Sector Management Assistance Program. Our principal counterparts in the field were Dr. Arismunandar and his staff in the Directorate General of Electricity and New Energies, but we also met with representatives of other concerned Government agencies and of the major donors. We briefed RSI and UNDP Resident Staff on the objectives and principal findings of our mission. A complete list of persons met is attached as Annex II.

2. During our stay we prepared a draft of the Energy Assessment Status Report, discussed it with the Government and obtained their comments, which have been incorporated in the attached draft (Annex I). The Government of Indonesia has now cleared this draft for final distribution subject to a further review if the internal Bank review results in substantial changes. A program of potential ESMAP activities was also agreed along with a tentative timetable for their implementation. These activities are described in Part V of the attached report.

3. The purposes of this memorandum are:

(i) to seek comments on the attached draft Energy Assessment Status Report from concerned Programs and Projects staff so that the report can be finalized for distribution, by July 1, if at all possible; and

(ii) to record some more general observations on energy sector issues in Indonesia and the possible role of the Bank in assisting GOI in developing and implementing an overall energy sector strategy.

Main Findings

4. The 1981 Energy Assessment and the Government's own Energy Policy statements have clearly identified the main elements of an energy sector strategy for the country as being the accelerated development of the country's many non-oil energy resources so as to diversify its energy

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1/ Mr. Mitchell to May 21, 1984.

supply mix and release additional exportable oil; and to moderate the rapid rate of growth of energy demand by reducing pricing subsidies for energy products and taking action to improve the efficiency of energy use in the major consuming sectors. Since 1981 considerable progress has been made in implementing these policies. On the supply side, the production of coal, gas, geothermal and hydropower have all increased, although more slowly than initially envisaged. On the demand side, major price increases have raised average retail petroleum product prices to the international level and raised the price of kerosene -- the only remaining subsidized product -- to 60% of the international price. These price increases, combined with (and to a large extent caused by the fiscal stringency resulting from) the slowdown in overall economic activity, have resulted in a slower rate of growth of domestic energy consumption (8% in 1981, 4% in 1982 and -2% in 1983 compared to about 12% during the 1970s).

5. Notwithstanding these developments, the task facing national energy planners in the coming two to three years is probably more difficult than over the recent past. This is mainly due to three factors:

(i) on demand management, the scope for further rationalization through major price increases is very limited for political reasons; thus the next phase of a demand management program entails the identification and development of other energy efficiency improvement measures which in turn implies a major effort in program development and the establishment of a supportive institutional framework;

(ii) on supply, the next major set of questions that need to be resolved relates primarily to fuel substitution choices in specific end use sectors -- the relative roles of coal, gas and geothermal in electric power development; the future contribution of LPG, kerosene, biomass and improved cookstoves to meeting household energy needs; the merits of developing charcoal or other biomass fuels to replace petroleum use in rural industries, etc. These issues are likely to require more complex analysis and a trans-fuel approach, for which the institutional framework in Indonesia's energy sector is not particularly well suited.

(iii) overall financial resource availability is projected to remain tight, so these adjustments and choices will have to be made in a more constrained environment.

6. A closely related concern is that the current capacity for energy sector planning in the country is likely to require considerable strengthening and some restructuring to address these issues adequately. At the moment, institutional responsibilities are structured largely by fuel type (directorates of coal, oil and gas, electric power, etc.). Interfuel issues are discussed and agreed at meetings of Bakoren (the interministerial energy policy body) and its technical committee,

the PTE, which is composed of civil servants from the various ministries. This system works well in terms of developing a consensus for major decisions which are discussed at meetings of those committees. But it does not necessarily ensure the systematic identification and in-depth analysis of key sector issues or the development and monitoring of a plan of action to study and resolve these issues. The main cause of this appears to be the absence of a properly staffed technical secretariat for the interministerial committees. The renewable energy directorate in the General Directorate of Electricity and New Energy Sources has been acting as this technical secretariat but it has neither the qualified staff nor the access to sector-wide information to do the job effectively.

7. Fortunately, there appears to be a growing recognition of these shortcomings within the Government. We were told that the responsibility for energy planning is likely to be transferred shortly to a strengthened Central Planning Unit in the Ministry of Mines and Energy. However, this will entail a change in focus and staffing of this unit which has so far been concerned mainly with mining issues and corporate planning for the Ministry as a whole rather than substantive energy sector issues. Also, as discussed in the attached status report, a number of studies and projects are underway or planned which will provide useful information on a variety of parameters required to make strategic decisions on specific options. For example, the Bank-sponsored gas utilization and city gas distribution studies will help to clarify a number of issues on the economic and technical feasibility of expanding gas use in industry, power and households. Similarly, the ADB financed rural energy project in Kalimantan will provide information on rural energy use patterns and relative fuel supply costs on that island. The proposed ESMAP review of cookstove initatives in the country and the formulation of a strategy for effective dissemination of improved cookstoves will help provide a basis for increasing the efficiency of energy use in the household sector. The French-financed energy conservation study will define the potential benefits and investment requirements associated with a major energy efficiency improvement program in the industrial and transport sectors. In effect, these studies and projects will provide the building blocks of information which will permit the analysis of specific options and the formulation of operational strategies for their realization. However, the actual execution of this subsequent work will require the provision of considerable analytical support and technical assistance to the Government.

Possible Bank Assistance

8. The Bank is one of the few agencies that can provide the type of broad-based support needed to formulate energy sector strategy. We have already provided considerable assistance through our lending operations in coal and power, through our sector work (the assessment of 1981, the pricing study in 1983, etc.), and through the supervision of the petroleum studies underway now. However, given the importance of energy in Indonesia, the complexity of energy sector issues and GOI's

need for assistance in resolving these issues, a larger allocation of Bank staff resources to analyze and advise on overall sector issues would appear to be justified. At the moment, there is no one in the Bank who is charged with systematically monitoring overall energy sector developments in Indonesia and providing advice and support to the Government on key issues which may not be directly connected with our operational involvement.

9. To a large extent, this situation reflects the limited demand that the Government of Indonesia has placed on this type of assistance from the Bank in the past. However, this postion appears to be changing. During our visit, Dr. Arismunander, the Director General of Electricity and New Energies specifically asked whether it would be possible for the Bank to provide his department with an advisor to help pull together the results and implications of the various projects and studies they are undertaking and define a strategy for follow up. In particular, he felt the Bank could advise the Government on a review of investment priorities for the energy sector, on developing a strategy for household energy options, on developing a program for energy conservation 1/ and on analyzing the impact of relative energy prices and on efficient energy use and on income distribution. The mission was unable to judge whether this receptivity for Bank advice is shared by other energy agencies and by the Ministries of Finance and Planning but RSI staff indicated that in their view there was a general growing recognition of the need to improve energy sector management and that this issue was worth pursuing at higher levels in the Government.

10. If such discussions confirm the merits of the Bank taking on a more active advisory role in the energy sector, the internal question that would need to be resolved is how the provision of such assistance can best be organized. In the mission's view, given the somewhat unclear allocation of responsibilities for energy sector planning within the Government as well as the limited coordination across departments, it may be preferable to have an energy sector specialist based within the Bank's resident mission who could both assist the Government by advising on key issues, with the support of other staff as required, and help the Bank in developing an integrated strategy for assistance in the energy sector. We discussed this idea with Messrs. Jeurling, Khalilzadeh-Shirazi and Ford in RSI; they agree in principle with the need for more Bank involvement in analyzing sector issues and thought that the allocation of an energy sector specialist to RSI may be a useful way of achieving this, but obviously the budgetary and other implications of this question would need to be discussed internally. If such an arrangement could not be worked out, then in the mission's view it would be extremely useful to allocate a higher level of staff resources in Washington to carry out this sectorwide analysis and advisory work on a regular basis.

1/ The Government had not yet received the Bank proposal for assistance in this area as set out in the letter sent following INDD2's mission of October, 1983.

Next Steps

(i) Once the draft energy assessment status report has been reviewed and cleared internally, it will be sent to the Government and donor agencies in final form;

(ii) Thereafter the preparation of the proposed ESMAP activities would commence with the issuance of activity initiation reports and terms of reference for internal review;

(iii) We would be happy to meet with Programs or other staff to discuss the more general observations raised in this memorandum.

Attachments.

Distribution:

Messrs. Baird (AEA); Beach, Ahmed, Chandran (AEP);
Kohli, Gamba, Segura (IND);
Ludvik, Weissman (EISVP);
Rovani, Rao, Bourcier, Sadove, Fish, Dosik, Heron, Saunders, McCarthy, Daffern, Pinard, Kalim, Bates (EGY);
Jeurling, Khalilzadeh, Shirazi, Ford (RSI);
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MAhmed:aaf.

ANNEX I

DRAFT

INDONESIA

ENERGY ASSESSMENT STATUS REPORT

JUNE 1984

PRINCIPAL ABBREVIATIONS AND ACRONYMS USED

Abbreviations

BSCF	-	billion standard cubic feet
GWh	-	gigawatt hour
kcal	-	kilocalorie
kg	-	kilogram
kWh	-	kilowatt hour
LNG	-	liquified natural gas
LPG	-	liquified petroleum gas
MCF	-	thousand cubic feet
MMBD	-	million barrels of oil per day
MW	-	megawatt
TCF	-	tonne of oil equivalent
toe	-	trillion cubic feet

Acronyms

BAKOREN	-	The National Energy Coordination Board
BPPT	-	Agency for Development and Application of Technology
PLN	-	The National Power Corporation
PTE	-	Technical Committee on Energy

CURRENCY EQUIVALENTS

1US$ = 1,000 Rupiah (Rp)

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II. MAJOR DEVELOPMENTS IN THE ENERGY SECTOR SINCE 1981

Overview

2.1 Indonesia's economic difficulties since 1981 have highlighted the need for new management strategies for the economy overall and the energy sector in particular. The decline in the growth of foreign exchange earnings from oil, which accounts for more than three quarters of the country's total foreign exchange earnings and the related fall in the growth of GDP have prompted economic measures to (i) promote non-oil exports, (ii) rephase public investment projects with large foreign exchange components, and (iii) restrain the demand for imports, in an effort to reduce the country's large balance of payments deficit.

2.2 The impact of these policies on the energy sector has been the postponement of several investment projects, a stronger emphasis on diversification of domestic energy supplies to save oil for export, and a new emphasis on the management of energy demand. This new attention to the demand side has revealed the need for more effective institutional arrangements to implement demand management objectives in a sector where the basic institutional structure for planning has been oriented towards energy supply. The following paragraphs outline the major developments in the energy sector as follows: (i) energy supply and exports, (ii) energy demand, (iii) energy pricing, (iv) energy efficiency, and (v) energy strategy and institutions.

Energy Supply and Exports

2.3 Oil and Gas. Between 1980 and 1981, petroleum production (including condensate) increased slightly from 1.58 million barrels per day (MMBD) to 1.6 million MMBD but in 1982, production decreased to 1.3 MMBD due to output quotas resulting from the world oil glut. Since then, oil output has remained around the ceiling of 1.3 MMBD of which about 70% is exported. As a result of lower exports and reduced prices, oil export earnings declined from US$15.2 billion in 1980/81 to US$12.3 billion in 1982/83. Part of this decline was offset by higher LNG exports which increased from 8.2 million tonnes in 1980/81 to 9.3 million tonnes in 1982/83 with a corresponding rise in export earnings from US$2.1 billion to US$2.5 billion.

2.4 There have also been efforts to develop and use natural gas in the domestic market. Several natural gas discoveries have been made since 1981, including the Nantung field, some offshore/onshore discoveries in Sumatra and East Kalimantan and areas in the Java Sea. These discoveries have added an estimated 18 TCF of potential reserves to Indonesia's estimated recoverable reserves of 53 TCF. GOI has also made considerable progress towards increased recovery of gas flared. Between 1981 and 1983 total gas production increased from 1,124 billion standard cubic feet (BSCF) to 1,186 BSCF. The unutilized portion of this production declined from 20% to 13% due to use of several gas recovery

I. INTRODUCTION 1/

1.1 The management of Indonesia's energy sector is extremely important to the country's economic development: the sector provides about three quarters of the country's foreign exchange earnings through exports of oil and LNG and at the same time must meet the domestic energy needs of an industrializing economy and a large population (147 million). In September, 1980 the Government of Indonesia (GOI) requested assistance from the UNDP/World Bank to assess the major issues in the energy sector and identify policy options which would provide a framework for further energy sector development and required external assistance.

1.2 In February/March, 1981 a UNDP/World Bank Energy Assessment Mission visited Indonesia and its findings were presented in a final report, Indonesia: Issues and Options in the Energy Sector, published in November, 1981. These findings highlighted the need to (i) explore and develop the country's large non-oil energy resource base (gas, coal hydropower, etc.) to substitute for oil in the domestic market and save oil for export; (ii) assess the interfuel substitution potential among fuels for specific end uses; (iii) formulate energy pricing policies and develop technologies required to promote more efficient energy use and stimulate interfuel substitution; and (iv) establish appropriate institutional mechanisms for national and subsector energy planning, including manpower development programs. The Government agreed with the main conclusions and recommendations of the energy assessment and has used the report for discussions on its energy strategy with donor countries. It has also acted on a number of the priority policy and investment areas identified by the assessment report.

1.3 The energy sector has been affected by changes in Indonesia's overall economic situation during the past three years. This status report, carried out under the Joint UNDP/World Bank Energy Sector Management Assistance Program (ESMAP) is designed to help the Government and the various donor agencies involved in the energy sector to take stock of these developments and to provide a framework for future technical assistance activities in the sector. To this end, the report (i) outlines the major developments that have occurred in the energy sector since the 1981 Energy Assessment; (ii) reviews progress made by the Government in implementing the recommendations of the Assessement; (iii) reports on some of the major ongoing technical assistance activities in the energy sector by various multilateral and bilateral donors; and (iv) identifies the requirements for further technical assistance which the Government and the Bank agree deserve priority attention.

1/ This report was prepared by Masood Ahmed and Matthew Mitchell based on a visit to Indonesia in May, 1984.

techniques. 1/ The total gas utilized in 1983 (1,032 BSCF) was allocated as follows: field use (31%), LNG production for export (53%), and domestic uses (16%). Of the 165 BSCF used domestically, various industries consumed 42%; fertilizer plants 36%; LPG plants 19%; and refineries 4%. Since 1981, about 185 km of gas pipelines have been installed to meet the needs of these various domestic gas consumers.

2.5 Refineries. More than half of the existing refinery capacity in Indonesia is more than 20 years old, with very little conversion capacity to upgrade the heavier products produced. Effective capacity of these refineries prior to recent expansions was around 465,000 bpd compared to a design capacity of about 530,000 bpd. Due to the quality of some of the crude oil used and lack of conversion capacity, about one third of refinery output has been exported at low prices, while petroleum products must be imported because local refineries have been able to supply only 75% of domestic demand.

2.6 To reduce this imbalance, GOI recently completed expansion projects for the Cilacap, Balikpapan and Dumai refineries (including conversion facilities) and performance tests are underway. These expansion projects should add about 325,000 bpd of refining capacity and would produce petroleum products more in line with the country's demand pattern.

2.7 In addition to these refinery expansion projects, a systematic effort needs to be made to improve the efficiency of existing refinery capacity given the refineries' high fuel consumption and losses, which have ranged from about 5-10% of total throughput. Experience in a number of countries has shown that the cost per barrel of energy savings programs for refineries, through investments in energy saving equipment and better management operation is in the range of US$7-10 compared to the world crude oil prices of US$29 per barrel.

2.8 Coal. Exploration and development projects are in progress by GOI alone in Sumatra, and under production sharing agreements with private companies in Kalimantan. In South Sumatra, exploration is concentrated on the area of the existing mine, Bukit Asam, and to date these efforts have proven some 200 million tonnes of reserves. GOI is also engaged in developing the Ombilin area of West Sumatra. Development efforts are expected to increase open pit mine output to 1.4 million tonnes and production from underground mines to 0.6 million tonnes annually. Also, exploration and development projects are planned outside the current production areas. In South and East Kalimantan, GOI has entered into joint ventures with private companies which have identified

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1/ These include a procedure to condense the heavier hydrocarbons, liquify propane and butane, and use the remainder for feedstock or energy for industrial plants. In addition, a "gas bank" system has been established in East Kalimantan, whereby associated gas, which otherwise would be flared, is sent out to major gas consumers (LNG plants, fertilizer plants, etc.).

substantial potential reserves of about 250 million tonnes. Total coal production in Indonesia increased from 351,000 tonnes in 1981 to 531,000 tonnes in 1983, and projected to reach 700,000 tonnes in 1984. Most of the production is consumed domestically by industries and railroads, but about 140,000 tonnes are produced for export by several private companies in East Kalimantan.

2.9 Geothermal. Surface manifestations of geothermal energy have been found on all islands except Kalimantan and the country's geothermal potential is estimated at about 10,000 MW. A few sites have been investigated but only one field, Kamojang in West Java, has been developed, with the first 30 MW geothermal generator being commissioned for commercial operation in 1983. Other sites in Java have been delineated, including Salak, Prajat and Dieng. In 1982, PERTAMINA, the national oil company, entered into a joint operation contract with Union Geothermal, a subsidiary of Union Oil of California, for development of the Salak field in West Java. Exploration is now in progress and GOI has announced its intention to leave other sites to prospective bidders to accelerate geothermal energy development. Outside Java, investigations and drilling have been carried out in the Lahendong area of Northern Sulawesi and at Kerinci, in the province of Jambi, Sumatra.

2.10 Hydropower. Since 1981, GOI has begun a comprehensive program of hydropower resource evaluation and studies. Surveys completed in 1983 covered 1,275 potential areas. These surveys have been followed by pre-feasibility and feasibility studies. Currently, total hydropower potential is estimated at 75,000 MW.

2.11 Electricity. Between 1980/81 and 1983/84, the installed capacity of Indonesia's public electricity system increased from 2,555 MW to 3,913 MW. Current capacity comprises 1,556 MW of oil fired steam plants; 996 MW of gas turbines; 793 MW of diesel; 537 MW of hydro; and 30 MW of geothermal power.

2.12 On the distribution side, the interconnection of the Java electricity grid at 150 kV has been completed. By early 1985 a 500 kV system covering West and Central Java should be completed, and will be extended to East Java by 1987. The current generation expansion program of the public electricity corporation (PLN) indicates an increase in a capacity to 15,000 MW by 1993/94. The major growth will be achieved by the construction of coal-fired thermal, hydro and geothermal power plants, reducing oil's share of generation from 84% at present to 20% in 1993/94. The latest statistics on captive power generating capacity (1982/83) indicate a total of 3,000 MW or nearly 77% of the public electricity system's capacity; but the growth of these plants on an average annual basis declined substantially from 6% between 1974/75 and 1979/80 to 0.9% in 1980/81 and 0.2% in 1981/82. However, an anomaly occurred in 1982/83 with a growth of 5.7% and the reason for this is currently under investigation.

Energy Demand

2.13 Between 1980/81 and 1983/84, total primary energy consumption increased by only 2.4%, a marked change from an average annual growth of about 12% during the 1970s. The decrease has resulted mainly from lower petroleum consumption (about 80% of total energy consumption) and may be attributed to substantial petroleum product price increases and lower rates of economic growth. However, recent improvements in the economy should lead to increased primary energy requirements.

2.14 The projections made by GOI for the current five-year plan, REPELITA IV, (1983/84 to 1988/89) are summarized in Table 2.1. They show a projected 6.8% average annual increase in total commercial primary energy demand, signalling a recovery from economic recession but still well below historical levels due to higher energy prices and anticipated efficiency improvements. A significant change is also expected in the structure of energy use: over three quarters of the incremental energy demand is projected to be met from non-oil sources. As a result, during the next five-year plan the share of oil in primary energy demand is expected to decrease from 78% to 62%.

Table 2.1: Commercial Primary Energy Demand, 1980/81 to 1988/89

	1980/81		1983/84		1988/89		Average Annual Growth %	
	Thousand toe	% share	Thousand toe	% share	Thousand toe	% share	1980/81 to 1983/84	1983/84 to 1988/89
Natural Gas	5,025	18.3	5,091	17.7	7,568	18.9	0.6	8.2
Coal	143	0.5	152	0.5	3,869	9.7	3.1	91.0
Hydropower	846	3.1	1,063	3.7	3,333	8.3	12.1	25.7
Geothermal	-	-	50	0.2	268	0.7	-	39.9
Subtotal	6,014	21.9	6,356	22.1	15,038	37.6	2.8	18.8
Oil	21,416	78.1	22,419	77.9	24,987	62.4	2.3	2.2
Total	27,430	106.0	28,775	100.0	40,025	100.0	2.4	6.8

Source: GOI.

2.15 Electricity. The consumption of electricity increased from 8,420 GWh in 1980/81 to 11,847 GWh in 1982/83, an average annual growth of 18.6%. The most recent forecast of electricity sales made by PLN, indicates continued growth at around this rate, so that by 1993/94 nearly 60,000 GWh would be sold in the country of which nearly 45,000 GWh would be in Java. In order to meet this demand, PLN estimates it will have to increase annual investment from a level of US$1 billion in 1982/83 to US$2.5 billion in 1993/94.

2.16 Petroleum. Since 1981, GOI has taken steps to raise the price of petroleum fuels, the average price of which increased by more than 50% annually in 1982 and 1983. As of the latest price increases (January, 1984), the prices of individual petroleum products are equal to or greater than their opportunity costs except for a slight subsidy (2%) on industrial diesel oil and a rather considerable subsidy on kerosene (64%). Although kerosene remains the only petroleum product with a major subsidy, the substantial progress made by GOI in raising the price during the past few years should not be overlooked; a 300% increase in the retail price since 1980 has raised the ratio of domestic kerosene prices to international levels from 20% to the present level of 64%.

2.17 Electricity. Between February 1982 and February 1984, the average price of electricity increased by about 67%, from Rp 53 to Rp 98 per kWh. Demand charges, which had remained constant during 1980-83 were increased in February 1984 by about 30% for nearly all categories of consumers.

2.18 Natural Gas. The domestic price of natural gas varies considerably among the different end users. Also, in some cases, it is denominated in US dollars and in other cases in rupiah. Presently, the price ranges from US$0.57 per MCF for a fertilizer company, which is one of the largest gas consumers, to about US$3.00 for cement plants, gas processing plants and power plants.

2.19 Coal. The price of domestic coal depends both on coal type and end use. For example, the free on rail price of Bukit Asam coal (5,500 kcal per kg) is about R.21,000 (US$21) per tonne for cement factories and R17,000 (US$17) per tonne for the railway. Higher grade anthracite sells at about US$43 per tonne to almost all consumers except a tin smelting plant, which pays $37.8 per tonne. The FOB international coal price is about US$40 per tonne at 6,670 kcal/kg. Exploration contracts with private companies operating in Kalimantan apparently stipulate that any coal they produce will be sold at the international price both domestically and for export.

Energy Pricing

2.20 Energy Pricing Study Findings. Following the energy assessment in 1981, GOI received assistance from the Bank in conducting an energy pricing study. It's objective was to assist the Government in formulating a pricing policy by analyzing the potential impacts of increased energy prices on the household, industrial and transport sectors, as well as macroeconomic effects. The study was completed and discussed with the Government in 1983 and some its major findings are summarized in Annex 1.

Energy Efficiency

2.21 Following considerable progress in the economic pricing of energy, the Government has begun a program to investigate the costs and benefits of technical measures to improve the efficiency of energy in

various subsectors. Progress made in this area is discussed in Section III pages 15-16.

Energy Strategy and Institutions

2.22 The Government of Indonesia has taken several steps towards the development of a national energy strategy. The 1981 energy assessement assisted in this effort by providing a broad framework of issues, options, and recommended actions. The following section reviews the progress GOI has made in the implementation of these recommendations as well as ongoing technical assistance efforts of multilateral and bilateral donor agencies.

2.23 This review indicates that GOI has begun to construct "building blocks" towards an energy policy in a number of key areas i.e., energy conservation potential, rural energy options, energy pricing, etc. These efforts should give some results over the next year and form a basis for an energy development strategy across the various energy subsectors. Further, this report also points to four priority areas of technical assistance focussed on improvements in the efficiency of energy transformation and end use :

(a) efficiency improvements in electricity generation;

(b) the potential for conversion of gas turbines to combined cycle operation;

(c) a maintenance program for isolated diesel generators;

(d) improvements to the energy efficiency of rural industries, and

(e) improvements to the efficiency of cookstoves in rural and urban areas.

2.24 It was agreed by GOI and the Bank that technical assistance projects in these areas would complement the numerous studies in progress for diversification of the energy supply base and are not being covered sufficiently in ongoing projects for efficiency improvement. Thus, these projects are designed to fill some of the gaps in the necessary building blocks for a national energy policy. At the same time, the Bank strongly recommends that more effort be made to develop an institutional capability to monitor the numerous ongoing studies in the energy sector with sufficient authority to plan and implement an overall strategy for fuel substitution, pricing and efficiency improvements, energy investment requirements etc., tasks which cannot be performed by the various agencies responsible for specific energy subsectors.

III. STATUS OF ENERGY ASSESSMENT RECOMMENDATIONS

Energy Resources

3.1 Coal

Recommendation

(a) Prepare a national coal policy which would include an appropriate institutional and contractual framework for coal development; the implementation of existing coal supply projects should be given priority.

Action Taken

The Government has embarked on a coal development program which consists of (i) exploration and development projects in South Sumatra, West Sumatra and South Kalimantan, where the largest concentrations of coal are located, (ii) coal basin studies of Indonesia to improve knowledge of recoverable reserves, (iii) investigation of small coal deposits in Java, for local use; (iv) a project to develop peat resources; (v) a manpower development study for the coal sector. Exploration and development in Sumatra are being carried out by the Directorate General of Mines, and its affiliated units: the Directorate of Mineral Resources, the Directorate of Environmental Geology, the Mineral Technology Development Center, and P.T. Batubara Bukit Asam, the company established for the Bukit Asam development program. Also a Directorate of Coal was recently established to oversee coal development.

The Bukit Asam project in South Sumatra, assisted by the Bank, is underway to expand production capacity to three million tonnes; this project also includes mining and transport infrastructure. Most of the coal produced is expected to supply the first two Suralaya power plants each with a capacity of 400 MW. There is also an exploration program in South Sumatra, in the area surrounding Bukit Asam. Exploration drilling to date has proven 200 million tonnes of coal reserves, which would supply the third and fourth Suralaya plants, to be commissioned in 1987/88. GOI is also developing coal mines in the Ombilin area of West Sumatra and total annual production expected from both open pit and underground mines is estimated at about two million tonnes.

In South and East Kalimantan, GOI has entered into joint ventures with seven private companies: P.T. Artumin Indonesia, P.T. Utah Indonesia, an AGIP/CONSOL joint venture, P.T. Kideco Jaya Agung, PT Kaltim Prima Coal, P.T. Adaro Indonesia and a Niso Iwai/Mobil Oil joint venture. So far this exploration effort has identified potential resources of 250 million tonnes.

Coal basin studies of the country are part of an ongoing project of the Directorate for Mineral Resources to make an inventory of Indonesian coal resources to form the basis of future coal development programs. The investigation of small coal deposits is designed to assist national coal companies develop small mines in Java for local use. The Government is interested in developing the country's substantial peat resources in areas where coal is not available and plans to investigate their use in steam power plants and as a fuel for domestic use (i.e. briquettes). GOI is receiving assistance in the development of peat from the Governments of Finland and the Netherlands. Also, GOI, with assistance from USAID has undertaken a coal transport and utilization study.

Recommendation

(b) Work on coal gasification and liquefaction projects should be postponed until there is a clearer indication of coal availability and quality to ensure that scarce technical manpower is not diverted from conventional energy supply.

Action Taken

No coal gasification or liquefication projects have been completed but GOI, with assistance from the Japanese Government is investigating the potential for the gasification of coal at Bangko in South Sumatra. The feasibility study began in 1983.

3.2 Hydropower

Recommendation

(a) Extensive hydro resource survey work should be carried out to develop a larger inventory of potential of hydro projects so that Indonesia's large hydropower potential of nearly 80,000 MW could be more systematically exploited.

Action Taken

PLN, with assistance from Nippon Koei of Japan, carried out a systematic countrywide resource survey with funds provided under a World Bank Loan. This survey covered 1,275 sites. This work is being followed up by prefeasibility and feasibility work in several promising areas. Prefeasibility studies for 41 sites and feasibility studies for 11 sites are receiving financing under Bank power projects.

3.3 Fuelwood/Biomass

Recommendation

(a) More effort should be made to examine the overall contribution of private woodlots to fuelwood supply and to assess the potential for collection and utilization of rice husks/straws. In addition, a more detailed assessment is needed of the location of sawmills and the market potential of their wastes.

Action Taken

In 1983, a Directorate General for Forest Utilization was created for the planning, exploitation and marketing of wood for commercial use, including fuelwood production. Within this directorate it has been proposed that a special team on energy be created to coordinate work in the energy areas. Currently the Directorate has a program to plant 325,000 hectares of wood annually through the year 2000, of which about 40% would be for fuelwood use. Other activities underway or in the planning stage include an inventory of forest resources, the promotion of private sector involvement in fuelwood production for the use of charcoal briquettes where they are less expensive to use than kerosene and fuelwood shortages exist; and the potential for energy use of woodwaste (which amounts to about 30 million m^3 annually), especially in sawmills.

The use of other biomass resources, such as rice husk and straw will be addressed in the regional energy development project in West Java which is being carried out with assistance from the Netherlands and in a study of energy resources and use in Kalimantan, assisted by the ADB. The study for West Java will develop an energy classification map of the region and indicate priorities for development including fuelwood, biomass and other energy sources. The project will test various energy use technologies in selected pilot areas. The project in Kalimantan will formulate programs for renewable energy development in Kalimantan and use the results to prepare

guidelines for similar programs in other rural areas of Indonesia. The supply options to be considered for the program include mini hydropower, forests, small coal deposits, peat, wood waste and agricultural residues. The study is designed to facilitate the preparation of viable investment projects.

Interfuel Substitution

3.4 Large Industry

Recommendation

(a) Increased attention should be given to the development of an industrial sector fuelled by gas. This will require the development of a natural gas pipeline to meet the needs of large industrial plants, industrial estates and power stations. At the same time, efforts should be made to locate industries within reasonable proximity of the fuels they use, especially gas.

Action Taken

The Government has embarked on a gas utilization study, with the assistance of the Bank, which should help clarify the scope for the substitution of gas for petroleum products in various industries, outline the infrastructure requirements and develop a gas utilization strategy. BEICIP, the consulting firm conducting the study, recently completed an inception report, a basic data report and a report outlining the methodology of the study. This is presently under review by GOI and the Bank. A second study, also supported by the Bank, is examining the prospects for city gas distribution in three major cities - Bogor, Jakarta and Medan. The city gas study will be completed by the end of 1984 and the gas utilization study by early 1985.

3.5 Households

Recommendation

(a) For Java/Bali, a study should be made of the potential for LPG use in cooking to replace kerosene, first in the urban areas and gradually throughout the islands. For lighting, LPG is a potential substitute for electricity in the short term but over the long term the promotion of further household electrification should be considered. Domestic LPG marketing, distribution and consumer acceptance should be tested on a pilot basis. On the outer islands, which are less populated and better endowed with wood, most cooking needs are met by woodfuel and supplies are adequate. However consideration should be given to

substituting kerosene for lighting by other fuels such as natural gas, LPG or gas from simple pyrolytic converters using wood as a feedstock.

Action Taken

GOI plans to investigate the potential for LPG substitution in the household sector under an LPG utilization study to be financed under a Bank Technical Assistance Credit. This study will establish a marketing strategy for increased LPG use in the household and commercial sectors but has not yet begun pending consultant selection. In addition, the various ongoing studies to evaluate rural energy demand and supply options in Western Java and Kalimantan should help further in definite feasible alternative energy sources for rural households. Also, wood gasification technologies are under investigation by BPPT in the Ministry of Research.

Recommendation

(b) Investigate the possibility of developing charcoal on the outer islands for transport to Java/Bali.

Action Taken

Some work has begun to assess the feasibility of charcoal production on the outer islands , including research in Bogor on the production of charcoal briquettes. So far prospects appear to be good from the production side but the mode and cost of transport is uncertain and therefore the cost delivered to Java/Bali is not yet known. Further investigation of the transport issue is necessary to assess the marketability of the charcoal. The Ministry of Public Works and the Ministry of Land Transport and Communication are examining this issue.

3.6 Large Power Plants

Recommendations

(a) Considering the uncertainties associated with coal development, multifuelled power plants should be planned wherever feasible. In the short run, the rapid development of geothermal resources of Java/Bali for base load generation appears essential. For peak load service, hydro-electric power stations should be planned after the necessary resource identification effort has been made.

Action Taken

PLN's latest power development plan calls for a reduction of the share of oil-fired generating capacity from 84% of total generating capacity in 1984 to 20% in 1993/94. By that time, coal is expected to provide the major share of generating capacity (65%). The first two 400 MW coal-fired units which will also be able to burn oil, are expected to be commissioned in October 1984 and June 1985. They are expected to use imported coal until 1986, when adequate domestic coal supplies are expected to be available. Work has also begun on two further 400 MW coal-fired stations which are due to come on stream by the end of the decade. These units will be coal-fired only but will be able to use imported coal if the development of indigenous coal is delayed. Hydropower and geothermal power will increase their respective shares from 14% and 0.8% in 1984 to 21.6% and 10.1% in 1993/94.

3.7 Small Power Plants

Recommendation

(a) Greater efforts should be made to replace diesel plants with wood-based thermal (gasification) and mini hydro generators, particularly on the islands outside of Java.

Action Taken

PLN's development plan for the next five years includes the installation of 55 MW of micro-hydro capacity and preinvestment work for a further 20 MW. Regarding wood gasification for electric power supply, research being conducted by BPPT and the studies on rural energy options for West Java and Kalimantan should provide information on current and potential utilization. Nevertheless, over the next ten years, PLN still expects to add about 1000 MW of isolated diesel capacity to meet electricity demand outside the interconnected grid.

Energy Pricing

3.8 Overall Coordination

Recommendation

(a) It is recommended that the Energy Planning Unit initiate long range studies that integrate the pricing of all energy sources. Once a

satisfactory mechanism is established, the results should be presented to BAKOREN, the interministerial energy policy body.

Action Taken

The energy pricing study completed in 1983 with assistance from the Bank provided an analysis of the potential impacts of energy price changes on various subsectors and on the macro-economy, along with some general policy guidelines. However, a program has not yet been developed for integrated energy pricing. To achieve this, appropriate institutional arrangements will need to be worked out for energy planning and pricing. In addition to the Ministry of Finance, the planning units in the Directorate General of Power and New General and the Ministry of Mines and Energy are both concerned with pricing matters but neither currently has the authority to integrate pricing policies across energy subsectors, to achieve overall energy planning targets.

3.8 Petroleum Product Subsidies

Recommendation

(a) Phase out the subsidy on kerosene gradually and examine whether the subsidies on diesel and fuel oil can be eliminated more quickly by segregating the marketing channels for these fuels versus kerosene the cheaper competing fuel.

Action Taken

Retail petroleum product prices have been raised substantially every year since 1981. As of January, 1984, all economic subsidies for petroleum products had been removed with the exception of kerosene and industrial diesel: the domestic prices of these fuels currently amount to 64% and 98% of their respective economic prices. The ratio of kerosene to diesel and fuel oil prices has also increased and this should help to reduce non-household demand for this product.

3.9 Electricity Tariffs

Recommendation

(a) Changes in the electricity tariff structure are recommended, notably tariff increases for medium and high voltage users. The policy of a uniform tariff across the country should be considered once the long run marginal cost (LRMC) of electricity has been established.

Action Taken

The January 1984 tariff increased the average tariff substantially, to Rp 98.3 (US$.09) compared to Rp 53.99 (US$.05) in 1980. Between 1980 and 1984, the peak energy charge for medium and high voltage consumers tripled. Energy demand charges for these consumers increased by 31% in 1984. PLN has been asked by the Directorate General for Power and New Energy to make a calculation of LRMC for the system, which will be used to evaluate the level and structure of electricity tariffs. At the same time, GOI has begun a program to lower costs of electricity production through improvements in the distribution system.

Energy Efficiency

3.10 Industry

Recommendation

(a) Examine the potential for reducing industrial energy demand through improved efficiency of energy use.

Action Taken

A preliminary study identifying the potential for energy savings through efficiency improvements in the main consuming sectors has been completed with bilateral assistance from France. This is now being followed by Phase I of an energy conservation program which includes eight months of evaluation of the potential for energy savings among a limited number of large industrial consumers. It includes the selection of 15 plants for a study which will: (i) investigate the energy management systems in use, (ii) promote the nomination of an individual responsible for coordination of energy management activities, (iii) propose short-term quick payback energy savings measures, and (iv) assess the need for in depth energy audits. The work is expected to be completed by the end of 1984.

3.11 Transport

Recommendation

(a) The long term potential for energy demand management in the transport sector needs to be analyzed as well as changes in transport modes.

Action Taken

The 1983 energy pricing study included a supplementary study on energy efficiency in the transport sector which provides a preliminary analysis of technical energy efficiency measures and fuel substitution alternatives. Furthermore , Phase I of the French assisted conservation program will gather information concerning characteristics and size of the vehicle fleet, volumes of passengers and goods transported, specific energy consumption for vehicle categories and factors affecting vehicle utilization, (i.e. organization of fuel supply, driving methods, etc.). The results will be used to prepare a program of preliminary recommendations on operation procedures, driving and repair methods, actions for reducing energy consumption without major energy investments and a larger program focussing on changes in the vehicle fleet based on energy performance etc.

3.12 Electric Power

Recommendation

(a) Action should be taken to reduce the high losses in transmission and distribution of electric power.

Action Taken

GOI, with Bank assistance, commissioned Beca Worley International of New Zealand to review and report on the adequacy of PLN's transmission and distribution program until 1987, including the development of a program to reduce technical losses in the distribution system. The consultant's report, submitted in April 1982, proposed a number of measures for loss reduction (i.e. capacitor installation, better metering equipment, etc). GOI has begun to implement the recommended program, but it has been delayed in part due to late arrival of the necessary hardware and is expected to be completed in 1-2 years. A complementary effort to reduce losses in power generation is now required. The first step of such an effort would be a feasibility study of the potential for improving the efficiency of selected generating plant and the preparation of a program to implement the necessary investment or operating procedures. This study is included in the priority technical assistance outlined in Section V.

3.13 Energy Demand/Supply Outlook

Recommendation

(a) The development of energy demand forecasts is recommended along with a series of alternative short and medium term plans for meeting demand.

Action Taken

Various government agencies such as BAPPENAS, BPPT and MIGAS and LIPI have produced their own forecasts of energy demand. However, there is an institutional constraint to developing integrated energy forecasts and related plans for meeting projected demand since there is no unit with the authority to carry out energy planning across all sectors. Consequently, interfuel issues, such as the alternative use of coal or gas in power generation presently have to be resolved at a high level and without the benefit of a formal framework for analytical and technical support. This institutional issue is addressed further below. The proposed USAID assisted Energy Planning for Development Project will provide the technical tools for establishing and maintaining an integrated computer based energy demand and supply model.

Energy Institutions and Training

3.14 Overall Energy Planning

Recommendation

(a) There is a need to strengthen the Energy Planning Unit and transfer it from the office of the Directorate General for Power to the Ministry of Energy and Mines so that it can effectively coordinate all entities involved in energy matters.

Action Taken

At present, institutional responsibilities are structured mainly by fuel type (directorates of coal, oil and gas, electric power, etc.). Interfuel issues are discussed at meetings of the BAKOREN (an inter-ministerial energy policy body) and its technical committee, the PTE, but there appears to be no adequately staffed technical support secretariat for the ministerial committees. The Renewable Energy Directorate of the General Directorate of Electricity and New Energies has been acting as the technical

secretariat but has neither sufficient staff nor cross-sector responsibility to carry out the job effectively. GOI, recognizing these shortcomings, may transfer the responsibility for overall energy planning to a strengthened Central Plannintg Unit in the Ministry of Mines and Energy.

3.15 Rural Energy Policy

Recommendation

(a) A Rural Energy Policy Coordinating Task Force should be established within the Energy Planning Unit for the planning and implementation of rural energy programs suited to the particular needs of the various islands.

Action Taken

There is currently a working group on rural energy within the Directorate General of Electricity and New Energy which has emerged in relation to ongoing studies on rural energy. Also there has been an extension of the work of the Directorate General for Power and New Energy, which also includes rural electrification, and it is expected that a rural energy subdirectorate will soon be created.

3.16 Geothermal Energy Development

Recommendation

(a) A public sector agency under the control of the Directorate General for Power should be established to encourage geothermal development, oversee private geothermal contacts and explore for and develop geothermal resources that do not attract private industry.

Action Taken

A Presidential decree of 1982 declared all geothermal exploration and production of steam the responsibility of the Directorate General for Oil and Gas. Under this directorate, the development of geothermal resources in Java is now being carried out by Pertamina in cooperation with foreign companies. Only one agreement has been signed (in Salak with Union Oil). Outside of Java, the Geological Survey is involved in exploration.

3.17 Training

Recommendation

(a) Steps should be taken to assess the trained manpower needs of the various energy organizations.

Action Taken

The Government has given a high priority to training needs and has established a policy of including a training component in all energy projects. GOI and PLN are planning to limit PLN's reliance on foreign consultants and to address the problem of scarce trained manpower. PLN has established a separate department for education and training and is receiving technical assistance from donor agencies, including the Bank, for (i) a project management advisory service, (ii) training in thermal power plant operation, (iii) job training in specific areas such as system planning, power market surveys, etc. (iv) the development of an improved accounting system and (v) an energy sector support program to assist a number of large projects. In the coal sector, there is an overall manpower development program which is being supported by the Bank through a coal exploration engineering project which includes a training component to upgrade the skills of the coal sector staff in all aspects of coal exploration and preinvestment. Training of GOI staff in energy is also a component in many of the ongoing bilateral and multilateral assistance programs.

IV. ONGOING TECHNICAL ASSISTANCE

Multilateral

4.1 World Bank. The Bank's ongoing assistance to the energy sector falls in to three major areas: technical assistance to the electricity sector associated with loans for power system development, gas utilization studies financed under a technical assistance credit, and training provided under a Coal Exploration Engineering Project. Under various electric power loans, the Bank is financing (i) a Project Management Advisory Service (PMAS) which addresses all aspects of project management; (ii) an advanced school for training in the operation of thermal power plants in Suralaya with a facsimile digital training simulator; (iii) job training with the help of consultants in selected areas such as civil works, contract administration, power system planning and operation and power market surveys, (iv) consultancy services to assist PLN in setting up of a more appropriate accounting system and strengthen procedures for budgetary controls, to reorganize and enlarge the entire manpower training and personnel management functions for PLN middle and low level staff, and to establish five training centers along with an improved job performance evaluation systems; (vi) an energy sector support program to assist a number of large power projects including consulting services, equipment for information processing and feasibility studies, and (vii) consulting services to help PLN design and implement a transmission development program as well as services for a nationwide study of hydropower potential, leading to engineering and detailed design of feasible projects.

4.2 In the gas sector, the Bank is supervising three gas studies financed under a Technical Assistance Credit: (i) a city gas systems feasibility study is to evaluate the expansion and modernization of the existing city gas system in Bogor, Jakarta, and Medan; (ii) a gas utilization study covering the potential use of both associated and non-associated gas in Indonesia and (iii), an LPG study to assist MIGAS investigate the feasibility of expanding LPG use in Indonesia for household and commercial applications covering engineering studies for LPG plant construction, an appropriate distribution plan, and the type of gas to be distributed, i.e. propane, butane or a mixture of the two.

4.3 In the coal sector, the Bank's Coal Exploration Engineering Project includes a training component to upgrade Indonesian skills to implement all aspects of the coal exploration and preinvestment program. Furthermore, funds have been allocated to finance a manpower development plan for the coal sector and training will be provided for strengthening staff responsible for coal policy formulation and investment decision making within the Ministry of Mines and Energy. Specific activities include advice and training in coal contract negotiations, and international coal trading and procurement matters.

4.4 Asian Development Bank (ADB). The ADB's technical assistance in the energy sector covers rural energy, electric power and geothermal

energy development. A study on Rural/and Renewable Energy Development in Kalimantan will assist GOI to formulate and plan a program for development of renewable energy supply options for meeting the energy needs of selected rural locations of the area. It will also prepare a framework of methodologies and guidelines for the formulation and planning of similar programs for other areas in Indonesia. The project began in March 1984 and is expected to continue for about 15 months. Its total cost of the is US$450,000. An inception report has been produced, which outlines the approach of the study in detail. Also, ADB plans to assist GOI in project preparation of forestry wood yard facilities in Java. This technical assistance will amount to US$248,000.

4.5 There are three ongoing projects for electric power development: (i) technical assistance to PLN to train staff in the preparation of feasibility studies (US$149,000); (ii) a feasibility study for the establishment of generating facilities in the Minahasa area of the Tangary II hydro site (US$150,000); and (iii) preparation of feasibility studies and detailed designs for mini-hydro development (US$150,000). In addition ADB is involved in a feasibility study for the Dieng Geothermal Scheme in Central Java (US$150,000). At the same time, the following studies are under consideration: (i) a power development study for a number of islands from Beli to Timor (US$150,000); (ii) assistance to the Ministry of Mining and Energy in energy planning, modelling institutional support and training (US$450,000); and (iii) an industrial energy conservation audit of 25-30 establishments in several energy intensive industries (US$450,000).

Bilateral

4.6 Canada. The energy assistance program has supported pre-investment work in the electric power sector in the past but the focus of the program is now shifting to other sectors, notably transportation and water resource development.

4.7 Finland. The main technical assistance activity of the Finnish Government in the energy sector is a study on the feasibility of using peat and wastewood for energy in South and Central Kalimantan and in Riau, Jambi. A project identification team visited Indonesia in May, 1984 to prepare a project document. In addition, the Government of Finland has been involved in several reforestation projects.

4.8 France. The French assistance is mainly in the support of a national energy efficiency improvement program of which the first phase (preliminary definition of potential savings) is now underway. Partial support will also be provided for the second phase of the study (detailed feasibility and design of projects) which is planned for 1985, but this work will also require other donor assistance.

4.9 Federal Republic of Germany (FRG). The bulk of the ongoing cooperation in energy is the implementation of major development projects, i.e. coal in Sumatra, power transmission in Sumatra and East Java and isolated diesel generation on the outer islands. In addition, FRG is

supporting a solar village project which provides for the installation and monitoring of a number of new energy technologies i.e. photovoltaics for water pumping, rice milling, desalinization, village television, and biogas, wood gasification, wind energy for water pumping, etc. at five locations in Java and Sumatra. The results of this project will be reviewed at the end of 1984, when the future scope and form of the project will be determined.

4.10 Italy. A proposal has been developed for a cooperative effort between the Indonesian and Italian Governments to develop a system of rural energy development planning, including the establishment of information systems, the design of a properly linked model to carry out the study, and the selection of priority areas for rural energy development for feasibility and preinvestment studies. The project also includes the training of Indonesian counterparts in energy and economic modelling, planning, management, energy technology development pricing, etc.

4.11 Japan. The economic and technical cooperation program of the Japanese Government includes several projects to develop Indonesian energy resources. They include: (i) hydropower projects at Kotapanjang and Renun, (ii) mineral exploration in Northern Sumatra, (ii) the feasibility of coal gasification in Bangko, South Sumatra and (iii) a feasibility study for a geothermal development project.

4.12 The Netherlands. The Government of the Netherlands is supporting a regional energy development project in West Java. The first phase of the project is now underway and includes data collection and the introduction of an energy classification system based on sub-regional energy balance for household, agricultural and industrial users, and identification of pilot areas for study. The second phase will involve the development of feasible solutions for specific regions, the implementation of the results on the selected pilot area and preparation for the implementation of the options selected on a commercial scale. In addition, the Dutch are involved in low head hydropower and peat development.

4.13 United Kingdom. Most of the British assistance is to the electric power sector under an aid/trade program. Most of the aid so far has been for isolated diesel generator projects. Other assistance includes a feasibility study for a hydro project in Sumatra and the installation of the Java/Madura submarine cable.

4.14 United States. Involvement of the U.S. in the energy sector is mainly through USAID programs which focus on: (i) support for a rural electrification program in Java and on the outer islands which will connect 180,000 consumers to the electricity system; this project was started in 1978 and is due to end this year; (ii) an energy manpower and training project which provides GOI staff with short-term and degree courses in energy in US universities, and is also due to end this year; (iii) support for energy planning in the Directorate General for Electricity & New Energies by providing hardware and expertise for

developing a computer-based energy model and through energy demand surveys; work on this project is scheduled to start soon; and (iv) support for the Puspiptek Energy Research Laboratory by providing equipment training and advisory/consultancy support; this project has just been started and will last until 1989. No other technical assistance projects are currently planned.

V. PRIORITY AREAS FOR FURTHER TECHNICAL ASSISTANCE

Overview

5.1 It is clear from the preceding discussion that many donor agencies are assisting the Government of Indonesia in carrying out numerous studies, pilot projects and other preparatory work aimed at developing and diversifying the country's energy supply base. However, as mentioned above, there is also a growing recognition among both national energy policy makers and donor agencies that these supply development efforts need to be supplemented with an equally vigorous program to reduce energy costs by improving the efficiency with which energy is transformed and used in the main consuming sectors. This new emphasis is also reflected in the priority requirements for future technical assistance in the energy sector.

5.2 Initial studies done in the area of energy conservation have confirmed that in Indonesia, as in most other developing countries, the potential savings from energy conservation are large and, moreover, realizable at costs which compete very favorably with the cost to the economy of supplying this energy through additional production or reduced exports. The recent substantial increases in domestic energy prices have further improved the financial viability of energy efficiency improvement projects, thereby enhancing private user awareness and responsiveness to these measures. Thus, the stage is now set for embarking upon a major national energy efficiency improvement program in Indonesia.

5.3 The development and implementation of such a program will require first, considerable technical assistance at both the program level and for the preparation of specific energy efficiency improvement projects and subsequently, financial support for the implementation of these projects in both the public and private sectors. Technical assistance at the program level is being provided under the ongoing French bilateral program. Its current phase, which will be completed by the end of 1984, will evaluate the costs and benefits of potential energy efficiency measures in a few large industrial, transport and commercial users. This will help to provide an overall framework for action and should also identify some projects which would then require the preparation of detailed feasibility and engineering designs.

5.4 Thus, major additional financial and technical assistance from donor agencies in the energy efficiency area will be required in 1985 when the current phase of the French assisted effort is completed. However, some assistance is needed in the interim on areas which are not covered by the ongoing effort or where the identification of energy saving projects has already progressed to an advanced stage. The more important of these tasks are listed below.

Efficiency Improvement of Power Generating Plant

5.5 PLN is the largest single user of petroleum products (about 18 million barrels of oil or 11% of total petroleum consumption) and oil-burning plants acount for 80% of PLN's installed capacity. While some of this capacity is relatively new and efficient, many of the plants are operating below design levels of efficiency and rated capacity. Experience in other countries has demonstrated that in many cases the efficiency and reliability of such plant can be improved with relatively little investment. PLN itself has become increasingly concerned about this issue, particularly since the recent increases in oil prices which have raised its financial production cost and resulted in higher tariffs. However, its staff need assistance in carrying out a systematic audit of its generating facilities to identify specific opportunities for efficiency improvement and define a generating plant efficiency improvement project. The initial focus would be on the larger generating plants, with the isolated small diesel sets being tackled in a separate and subsequent phase. The proposed audit would require about 25 weeks of specialist input (in addition to PLN staff time) and be completed in about three months at an estimated cost of $65,000-75,000. The Government has requested that this task be carried out under the Energy Sector Management Assistance Program (ESMAP). The mission supports this request and recommends that this important study be funded on a priority basis.

Priok Gas Turbine Power Plant Potential for Conversion to Combined Cycle

5.6 The Priok power plant, near Jakarta, has four 50 MW gas turbines which are currently used for peaking purposes because of their high fuel consumption (0.40-0.64 liters/kWh compared to an average consumption of 0.30 liters/kWh for diesel and fuel oil plants). An alternative use of these turbines would be to install a waste-heat boiler and operate them on a combined cycle basis for base load generation. This would result in much higher thermal efficiency rates but it is not clear whether the increased efficiency would justify the additional investment or whether there are other technical limitations on such a conversion. PLN would like assistance in resolving this question so as to be able to better respond to private sector proposals to implement such a conversion project. This study should also help to define whether the prospects for conversion to combined cycle would be limited to the Priok plant or applicable to other PLN installations as well. In the event of the latter, the study would set out a methodology and criteria for evaluating the prospects at these other installations. The study would require about two months of specialist input and cost approximately $25,000. The Government has requested ESMAP assistance for this task.

Maintenance Program for Isolated Diesel Sets

5.7 PLN currently has about 600 MW of isolated diesel capacity outside Java and expects to add another 1000 MW in the coming decade. In an attempt to improve the efficiency of diesel generation, the company is also moving towards the use of larger units (5 MW or above). This increases the importance of having a proper preventive maintenance pro-

gram for these sets because the use of larger units makes breakdowns more costly and difficult to cope with. The current maintenance procedures are unlikely to prove adequate for these future needs and PLN requires assistance in reviewing these procedures and in drawing up a comprehensive maintenance program for its expanding isolated diesel system. Such a review would also define the equipment and spare parts needed for effective and timely maintenance, and the appropriate institutional and staffing levels to carry out this task. The Government has requested ESMAP assistance in preparing the detailed terms of reference, scope of work and estimated cost for such a review, which could then be funded through bilateral or multilateral donor assistance.

Rural Industry Energy Efficiency Improvement

5.8 The energy assessment report estimated that rural industries (sawmilling, brickmaking, rice milling, food processing, etc.) consumed about 10 million barrels of petroleum products - about a fifth of total industrial petroleum demand - and a large but unquantified volume of fuelwood and other energy products. These figures demonstrate the importance of rural industries in Indonesia's economy and highlight the need to ensure that these industries use energy as efficiently as practicable. The experience of other countries and the reported evidence in Indonesia suggest that this is currently far from being generally the case. However, tackling the issue for rural industries is also likely to be organizationally and logistically more complex because they are dispersed, generally more backward in a technological and managerial sense, and frequently have more limited access to credit for financing energy efficiency improvement investments. At the same time, given their aggregate energy consumption and the Government's focus on improving rural development prospects, their energy use cannot be ignored and because of the recent increase in energy prices they are themselves more likely to be responsive to assistance in reducing their energy costs.

5.9 Thus, a cautious but systematic approach to improving the energy efficiency of rural industries appears to be warranted. The two most important industries are brickmaking and sawmilling and these should be the initial focus of a such a program. In both cases, the first step of the program would be to carry out an evaluation of the various technical options to improve the efficiency of energy use and to formulate a detailed set of proposals with regards to design and technolgies which will result in economically profitable energy savings. The study would also prepare cost estimates for the subsequent preinvestment or investment required and it would define the appropriate role of the Government in terms of both financial and technical support for such a program.

5.10 The first study would evaluate the prospects for the brickmaking industry which uses about 1.5 million barrels of oil per year and is located mainly in Java. It is expected that this study would require about six months of specialist input and cost about $70,000. The study could be implemented during 1984 with ESMAP assistance, which has been requested by the Government.

5.11 The second study would focus on the sawmilling industry which uses seven million barrels of oil per year. This industry is located mainly on Kalimantan. A major focus of an energy efficiency improvement program for this industry would be to evaluate the prospects for utilizing waste products through gasification or direct combustion. This study should be carried out in 1985 because it will then be able to build upon the work currently being done through the ADB-assisted rural energy development study of Kalimantan, which will provide much more accurate information on the pattern of energy use by industrial users on the island and will also include a preliminary review of the potential for utilizing gasifiers in the rural industrial sector. Thus, the precise scope, focus and costing of the Sawmill Industry Energy Efficiency Improvement Study should be undertaken after the results of the ongoing ADB supported study are available.

Strategy for the Promotion of Improved Cookstoves

5.12 Rural households cook mainly with wood on open fires or tradional low efficiency stoves. Urban households - particularly on Java - use kerosene as a primary cooking fuel, utilizing a variety of stoves with different but generally low efficiencies. The Government is concerned about the impact of recent kerosene price increases on household budgets and about the growing difficulty of obtaining adequate supplies of traditional cooking fuel in rural Java and in higher density areas on some of the other islands. This concern is reinforced by the fact that household cooking accounts for an estimated one-third of national kerosene demand or over 10 percent of total petroleum consumption. Tackling this issue requires a variety of actions but one major element would be to promote the use of more efficient cooking stoves for both kerosene and wood. Some initiatives have already been undertaken in this regard including a technical evaluation of the efficiency of various kerosene stoves and small programs to introduce more efficient woodstoves by non-governmental organization in different areas. However, there has been no systematic monitoring of these efforts and consequently little evidence is available on their relative success, on which future work can be based. Moreover, there is no overall strategy on how best to promote improved stove dissemination and commercialization in rural and urban areas and what role the Government should play in this effort. The Government views such a strategy and an associated set of priorities for action as an important task and therefore has requested ESMAP assistance in carrying out this work. The study would review the work that has been done to date, and in the light of the lessons learned from this work, as well as from the experience of other countries, the study would propose an overall strategy for an improved stove program (including both kerosene to woodstoves) and define a detailed and phased program of action to implement this strategy. The study would require about five months of specialist input and cost about $60,000.

ANNEX 1

Brief Summary of Energy Pricing Study Findings by Sector

Industry

There is considerable price elasticity of energy demand in this sector, particularly for kerosene (-4.54) and for diesel oil (-6.68); the demand for electricity and fuel oil, however, appears to be fairly enelastic to price. The analysis also shows that there is positive cross-price elasticity; i.e. most fuels used in the sector are substitutes for one another. A particularly strong interfuel substitution pattern was found between diesel oil and electricity.

Households

The price elasticity of demand for kerosene, one of the most important fuels in this sector, was found to be closed to unity, without variation according to income level and geographical location. The study also produced two findings significant for the current policy of subsidizing kerosene on the grounds that it benefits the poor and prevents increases in fuelwood use which could lead to further deforestation in severely affected areas. The first is that the poorest 40% of the population account for only 20% of kerosene consumption, suggesting that the present subsidy is biased towards higher income groups. The second is that the demand for firewood is relatively inelastic to changes in kerosene prices, even in rural Java, where deforestation is a major problem. In some areas the price elasticity was found to be extremely low but these were mostly areas where other fuelwood consumption was low or deforestation is not a major problem.

Transport

Analysis of price responses in the transport sector was hampered by a weak data base. Available data indicate that the demand for transport services is fairly inelastic to price changes. However, there may be some short run price response in terms of measures to improve efficiency and inter modal substitution for private cars. Over the long term, if gradual price changes are announced, they could have an effect on producing a vehicle stock that is less energy intensive.

ANNEX II

LIST OF PERSONS MET

1. Ministry of Mines and Energy

Directorate General for Electricity and New Energy

Mr. Arismunander, Director General
Mr. Surjadi, Director, Renewable Energy
Mr. Derzan, Director, Power
Mr. Bambang Sarah, Director, Operations, PLN
Mr. Pulgiantoro, Director, Maintenance, PLN
Mr. Samadicum, Deputy Director for General Planning, PLN
Mr. S. Pradano, Operation Planning, PLN
Mr. Madrianto Kadri, Renewable Energy Division

Directorate General for Oil and Gas (MIGAS)

Mr. Hantoro, Director General
Mr. Mazuan, Director, Geothermal Development

Directorate General for Coal

Mr. Johannas, Director General

Planning Bureau

Mr. Soembarjono, Bureau Chief

2. Ministry of Research BPPT

Mr. Wardiman, Director

3. Ministry of Forestry

Director, Forest Utilization

4. International and Bilateral Donor Agencies

Mr. James Baird, Project Officer for Rural Electrification, Embassy of the United States of America

Mr. Peter Furesz, Second Secretary (Commercial) and Vice Consul, Embassy of Canada

Mr. Jean Pierre Geurey, Technical Cooperation Attache, Embassy of France

Mr. Fumihiko Kimura, First Secretary, Embassy of Japan.
Mr. J. C. Jurrjens, Second Secretary, Development Cooperation, Embassy of the Netherlands

Mr. von Mallinckrodt, Resident Representative, UNDP

Mr. R. Mason, Commercial Counsellor, Embassy of Canada

Mr. Michael Morris, Third Secretary (Commercial), Embassy of Great Britain

Ms. Ruth Nuttall, Second Secretary, Embassy of New Zealand.

Mrs. Ushanov, Embassy of Finland.

Mr. Robert Vanderloo, First Secretary (Commercial), Embassy of Canada

Chron

The World Bank
INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT
INTERNATIONAL DEVELOPMENT ASSOCIATION

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Cable Address: INTBAFRAD
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June 8, 1984

Mr. H. P. Kreulen
H.V.A. International B.V.
29 Leidseplein
P. O. Box 19718
1000 GS Amsterdam
The Netherlands

Dear Mr. Kreulen:

Thank you for your letter of May 11, 1984 to Mr. Bharier. As requested by you we are enclosing copies of the energy assessment reports for Sri Lanka, Kenya, Indonesia and Zimbabwe. The Ethiopia report has yet to be finalized but we will send it to you as soon as it is available.

Thank you also for the attached study on the application of spirit from molasses as fuel for cooking. Our staff are reviewing this report and we will send you any comments that we may have on it.

Yours sincerely,

Masood Ahmed
Acting Division Chief
Energy Assessments Division
Energy Department

Enclosures

MAhmed:aaf.

June 8, 1984

Mahsood,

I would greatly appreciate receiving a copy of the Consultants' Report on BANGLADESH: Priority Investment Program for Energy.

Ibrahim

IElwan:nc

Report attached
Despite the blue
cover, the report
was never circulated
outside the Bank at
the request of Programs.
Its status is equivalent
to Green Cover.
I will call you
in the next day or
so to talk about
your [illegible]
[illegible]

Mr. Mahsood Ahmed, Deputy Chief, EGYEA
Room D-449

ENERGY SECTOR MANAGEMENT ASSISTANCE PROGRAM

PRODUCT LINE

	PRODUCT	MANAGER
EXISTING	Power Efficiency	Gulstone
	Petroleum Supply Management	Ferroukhi/Mian
	Industrial Energy Conservation	Gaskin/Gamba
	Transport Conservation	Gaskin
	Rural Industry Efficiency	Floor/Chronowski (?)
	Stoves/Charcoal	Floor
	Solar - Main Waterheating	Malik
	Institutional Review	Alahdad/Sherbiny
	EASRs	Various country managers
PLANNED	Gas	To be identified
	Refineries	Weimper/Segura
	Biomass Conversion	To be identified
	Buildings/Commercial Sector Cons.	To be identified

ESMAP STAFF

STAFF	COUNTRIES MANAGED
Alahdad	Uganda, Sudan, Papua New Guinea, Malawi
Floor	Senegal, Sri Lanka
King	Burundi, Rwanda, Haiti, Niger
Mitchell	Bangladesh, Nepal, Indonesia, Seychelles
Armar	Zambia, Zimbabwe, Gambia, Botswana
Bachrach	Costa Rica, Bolivia
Sherbiny	Morocco, Turkey

Note: Other countries where managers still need to be identified:
1984: Nigeria, Turkey, Ethiopia, Kenya, Peru, Tanzania, YAR, Portugal, Benin/Togo.

MAhmed:aaf
June 8, 1984

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PAGE 1 OF

OFFICIAL DEPT/DIV ABBREVIATION: EGYEA

MESSAGE NUMBER

TEST NUMBER (FOR CASHIER'S USE ONLY)

START HERE

CEYLON INTERCONTINENTAL, COLOMBO, SRI LANKA. FOR WORLD BANK GUEST MR. GARY GASKIN. (AAA) PLEASE MAKE SURE YOU SEE THE UNDP RESIDENT REPRESENTATIVE AND BRIEF HIM ON YOUR MISSION BEFORE YOU LEAVE. (BBB) CHECK IF GOVERNMENT WOULD LIKE MORE COPIES OF THE ASSESSMENT REPORT AND THE FOLLOW UP STATUS REPORT. (CCC) PLEASE CHECK FROM BANK/UNDP OFFICES WHETHER COPIES OF JANUARY 1984 STATUS REPORT WERE DISTRIBUTED TO ALL THE LOCAL REPRESENTATIVES OF THE DONORS, IF NOT, PLEASE ASK THE BANK OFFICE TO ARRANGE FOR THIS DISTRIBUTION. (DDD) GLAD TO KNOW YOUR MISSION IS GOING ON WELL. LOOK FORWARD TO SEEING YOU IN WASHINGTON. REGARDS, MASOOD AHMED, DEPUTY DIVISION CHIEF, ENERGY ASSESSMENTS DIVISION, WORLD BANK.

END OF TEXT

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INFORMATION BELOW NOT TO BE TRANSMITTED

CLASS OF SERVICE: TELEX TELEX NO.: Colombo 21188 DATE: 6/7/84

SUBJECT: ESMAP: Sri Lanka-Transport Sector and EASR

DRAFTED BY: MAhmed:aaf

EXTENSION: 7-4545

CLEARANCES AND COPY DISTRIBUTION: cc and cleared with Mr. Bharier

AUTHORIZED BY (Name and Signature): Masood Ahmed, Deputy Chief, EGYEA

DEPARTMENT: Energy

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SECTION

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WORLD BANK OUTGOING MESSAGE FORM Cable, Telex

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OFFICIAL DEPT/DIV ABBREVIATION: EGYEA

MESSAGE NUMBER

TEST NUMBER (FOR CASHIER'S USE ONLY)

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THE PRESIDENT HOTEL, GABORENE, BOTSWANA. FOR YOUR GUEST MR. A. ARMAR. FOR YOUR INFORMATION I AM QUOTING TELEX SENT BY MR. WACKMAN TO BOTSWANA POWER CORPORATION. (AAA) QUOTE ATTENTION MR. E. D. BELL, CHIEF EXECUTIVE. REFERENCE MORUPULE POWER PROJECT (LN-2209-BT) YOUR LETTER 24 APRIL 1984 AND KENNEDY AND DONKIN REPORT ON REVIEW OF OPTIONS FOR SECOND STAGE DEVELOPMENT OF THE MORUPULE POWER PROJECT. THANK YOU FOR YOUR COMMENTS WHICH WE NOTE. WE SENT OUR COMMENTS ON THE TARIFF STUDY BY TELEX ON 1 MAY, 1984. WE WOULD LIKE TO DISCUSS THE K AND D REVIEW IN THE CONTEXT OF WIDER DISCUSSIONS ON THE DEVELOPMENT OF THE POWER SYSTEM WHICH WOULD INCLUDE THE MAJOR ISSUES RAISED IN THE TARIFF STUDY, SUCH AS DEMAND FORECAST, AND ALSO POSSIBILITIES FOR REGIONAL INTERCONNECTIONS. WE ARE PLANNING OUR NEXT SUPERVISION MISSION FOR MID-SEPTEMBER 1984, AND CONSIDER THAT IT WOULD BE OPPORTUNE TO INCLUDE THE PROPOSED DISCUSSIONS IN THAT MISSION. UNQUOTE. (BBB) RE ZIMBABWE. WHILE YOU ARE THERE PLEASE CHECK UP ON THE CURRENT STATUS OF IMPLEMENTATION FOR THE FOLLOW UP TO THE POWER LOSS REDUCTION STUDY. IS GOVERNMENT INTERESTED IN ANY ASSISTANCE TO HELP IMPLEMENT ANY OF THE STUDIES/PROJECTS IDENTIFIED BY THAT WORK? REGARDS, MASOOD AHMED, DEPUTY CHIEF, ENERGY ASSESSMENTS DIVISION, WORLD BANK.

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CLASS OF SERVICE: TELEX	TELEX NO.: 2434-BT	DATE: 6/5/84
SUBJECT: ESMAP: Botswana/Zimbabwe	DRAFTED BY: MAhmed:aaf.	EXTENSION: 7-4545
CLEARANCES AND COPY DISTRIBUTION: cc & cleared with Mr. Bharier (EGYEA)	AUTHORIZED BY (Name and Signature): Masood Ahmed, Deputy Chief, EGYEA	
	DEPARTMENT: Energy	
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MESSAGE NUMBER

TEST NUMBER (FOR CASHIER'S USE ONLY)

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MR. MAX AITKEN, SHEDDEN PACIFIC, MELBOURNE, AUSTRALIA. RE YOUR TELEX TO MR. BHARIER OF MAY 18. AS FAR AS WE KNOW THE CURRENT STATUS OF THE KENYA POWER EFFICIENCY IMPROVEMENT PROJECTS IS THAT THE GOVERNMENT IS SEEKING FINANCING FOR THEIR IMPLEMENTATION. I AM SURE THEY WILL BE INTERESTED IN ANY PACKAGE OF ASSISTANCE THAT YOU COULD PUT TOGETHER. THE PERSON TO CONTACT IN KENYA IS MR. GECAU, THE CHAIRMAN OF THE KENYA POWER AND LIGHT COMPANY. GRATEFUL IF YOU COULD KEEP US POSTED OF FURTHER DEVELOPMENTS. REGARDS. MASOOD AHMED, ASSESSMENTS DIVISION, ENERGY DEPARTMENT, WORLDBANK

END OF TEXT

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INFORMATION BELOW NOT TO BE TRANSMITTED

CLASS OF SERVICE: TELEX | TELEX NO.: SPPLML AA 38110 | DATE: June 1/84

SUBJECT: ESMAP: Kenya

DRAFTED BY: MAhmed:ks

EXTENSION: 7-4545

CLEARANCES AND COPY DISTRIBUTION:

AUTHORIZED BY (Name and Signature): Robin Bates, Acting Chief, EGYEA

DEPARTMENT: ENERGY

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WORLD BANK / INTERNATIONAL FINANCE CORPORATION

OFFICE MEMORANDUM

To: Distribution Date: June 1, 1984

From: Masood Ahmed, Deputy Chief, EGYEA

Subject: ESMAP: Quarterly Status Report

1. I am attaching, for your information and comments, a copy of the latest status report on the Energy Sector Management Assistance Program (ESMAP). This report is divided into four sections. The first three sections, whose format remains unchanged from previous reports are:

I. Listing and brief description of activities completed to date under this Program, as well as information on the current status of implementation of these activities;

II. Listing (by region) and status of all ongoing activities as well as activities planned to start in the next three months;

III. Brief description of each activity listed in Part II.

2. Section IV of the report is a Quarterly Information Brief on the ESMAP which has been prepared for external dissemination. This Brief incorporates the information listed in Parts IV and V of previous quarterly status reports into an integrated document which is intended to be self-explanatory and can be handed out in response to external queries about the Program and its current operations. The Brief includes:

- a short write-up on the objectives and scope of ESMAP;
- a brief description of the investment and technical assistance projects for which prefeasibility studies have been completed under the ESMAP, as well as the information on their current implementation status;
- a brief description of potential ESMAP activities for which cofinancing support is being sought from other donors; and
- a summary listing of completed, ongoing and planned ESMAP operations.

3. While there is necessarily some overlap between the information contained in the Quarterly Information Brief and the preceding sections of the Status Report, we have found it extremely useful to have a self-contained and readily available document on the program that can be handed out to visitors and other agencies who are interested in the ESMAP. We propose to circulate this Brief to the major donor agencies on a regular basis to keep them abreast of ESMAP operations and to help them program their own assistance activities either in conjunction with the ESMAP or to follow up on the projects identified through the program.

4. I would appreciate any comments or suggestions you might have on the attached report or on the Program's current activities. I would also be glad to provide any additional copies of the attached documents.

Attachment.

Distribution:

Messrs. Dherse, Ludvik, Weissman (EISVP);
Bronfman, Wackman (EAP); Bouhaouala, Thiam, Davis (WAP);
Turnham, Beach, Ahmed (AEP);
Geli, Brandreth, Elwan, Nowicki (ASP);
Finzi, Reekie, Mathai (EMP);
Jennings, Moscote, Linder, Graves (LCP);
Gulhati (EANVP); Kraske (EA1);
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O'Brien (WANVP); Humphrey, Reese, Hinkle, Isenman (WA1);
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Spears (AGR); Bennathan (TRP); Taylor (LEG); Vibert (VPCOF);
Golan, Kohli, Gamba, Segura, Rowat, Dervis, Stern (IND);
Rovani, Rao, Sheehan, Sadove, Bourcier, Fish, Dosik, Heron,
Saunders, McCarthy, Iskander, Bharier (o/r), Nayyar, Daffern,
Bauer, Batzella, Kalim, Bates (EGY);
Mashler, Harland, Cox (3) (UNDP, New York);

Mesdames: Johansen (TRP); Haug (IND)
cc: EGYEA Staff

MAhmed:aaf.

Part I

ENERGY SECTOR MANAGEMENT ASSISTANCE PROGRAM

Status of Completed Activities

	Date of Activity Completion Report
Bangladesh: Priority Investment Program for Energy: On the basis of several visits to Bangladesh, a consultant (Ansari) has identified high priority energy investments, particularly in the power and natural gas subsectors. An Activity Completion Report for this task was issued in May, 1983. However, at the request of the Government and Programs staff, the report is not being distributed outside the Bank.	May, 1983
Sudan: Management Assistance to the Ministry of Energy and Mining: At the request of the Minister of Petroleum, endorsed by the Assessment Mission, a consultant (Ansari) visited Sudan from February 22-April 1, 1983 to help establish a data reporting and monitoring system which would enable the senior policy-makers in the Ministry to take prompt and informed decisions on key sector issues. This work has also identified the need for a clearer definition of the functions of different departments in the Ministry. The results of this work were incorporated in the Energy Assessment Report. An Activity Completion Report was issued in May, 1983.	May, 1983
Panama: Power System Loss Reduction Study: In their mission of January, 1983, Sear et al identified possible reductions of power distribution losses. Some of these measures were incorporated in the Bank's second power distribution loan. An Activity Completion Report was issued in June, 1983.	June, 1983
Zimbabwe: Power System Loss Reduction Study: A mission (Sear et al) visited Zimbabwe in November 1982 to evaluate the potential for reducing losses in the electric power distribution network. The mission identified substantial savings that could be realized in the short and medium term. An Activity Completion Report was circulated in June, 1983. Progress in the implementation of these	June, 1983

recommendations will be ascertained during a forthcoming mission.

Papua New Guinea: Energy Assessment Status Report: A mission (Ahmed/Prasad) visited Papua New Guinea in early June, 1983 to prepare this report which was cleared by the Government in the field and subsequently issued in final form in July, 1983. — July, 1983

Sri Lanka: Power System Loss Reduction Study: A mission (Sear et al) visited Sri Lanka in March-April, 1983 to evaluate the potential for reducing power distribution losses. Significant potential savings have been identified both in distribution and through improving the efficiency of generating plant. The Government has begun to implement the recommendations of the report by setting up a T&D loss reduction program with Bank assistance. The rehabilitation of the Kelanitissa steam plant is expected to take place in 1985 when the plant can be withdrawn from service. Funding for this activity is being sought. — July, 1983

Mauritius: Energy Assessment Status Report: This report was prepared in conjunction with a September, 1983 supervision mission for the ongoing Energy Planning Technical Assistance Project. Having been cleared by the Government in the field, the report was issued in final in October. The report outlines the considerable progress that has been made in developing Mauritius' bagasse potential but it also identifies the need for further Government action and external assistance in the area of demand management and institutional coordination. — October, 1983

Malawi: Technical Assistance Package to Improve the Efficiency of Fuelwood Use in the Tobacco Industry: The objective of this task was to evaluate the various technical options for improving the efficiency of wood use in the tobacco industry and to define a program to begin achieving these improvements. The work was carried out by a June, 1983 mission comprising Messrs. Wagner (EA1), Lambert, Stocks (consultants). The mission's report has been circulated in final and has identified a $350,000 pilot program to begin achieving these savings. This pilot program is being financed under the Bank's second technical assistance credit for Malawi. — November, 1983

Sri Lanka: Energy Assessment Status Report: This report which was prepared by a December, 1983 mission (Ahmed/Kraske), reviewed the significant progress made in the energy sector since the May, 1982 issuance of the Energy Assessment Report. The report also identified a number of areas where further technical assistance was required. Some of this assistance (in the area of energy efficiency improvements) is being provided through the ESMAP. — January, 1984

Malawi: Energy Assessment Status Report: This report was prepared by an August, 1983 mission (Ansari). The report has identified the priority technical assistance requirements, most of which are being picked up through an IDA assisted TA project. — January, 1984

Burundi: Energy Assessment Status Report: A staff mission (King) visited Burundi in September, 1983 to evaluate developments in the energy sector since the June, 1982 issuance of the Energy Assessment Report, and to identify the need for further technical assistance in implementing the Assessment recommendations. The final report, issued in February, 1984, was circulated by the Government at the UNDP sponsored Donors Round Table Meeting in Bujumbura held in the same month. — February, 1984

Burundi: Petroleum Supply Management: A September, 1983 mission (Rocheron/King) reviewed existing and alternative arrangments for the import and distribution of petroleum products. The Activity Completion Report sets out a number of recommendations on diversifying supply routes and strengthening the Government's capacity to formulate and implement a cost effective petroleum supply strategy. It also includes a proposal for technical assistance over a one year period to help the Government develop this capability. The report was circulated by the Government at the February, 1984 UNDP sponsored Donors Round Table Meeting in Bujumbura at which the OPEC Fund expressed a strong interest in financing the technical assistance package identified in the report. — February, 1984

Kenya: Power Sector Efficiency Audit — April, 1984

The objective of this audit is to define short and medium term measures to implement cost effective modifications to system facilities, operations and construction standards that will improve the technical efficiency of the power system and reduce non-technical losses. The audit was

conducted by a two-man team (Messrs. Banks and Colette) which visited Kenya in early September. The mission has identified a $11 million investment and TA package for reducing system losses and rehabilitating the Kipevu steam plant. These investments are expected to result in annual benefits of $10.5 million. The Government of Kenya is currently seeking financing to implement this project.

Bangladesh: Energy Assessment Status Report: April 1984

The Energy Assessment Report for Bangladesh was issued in October, 1982. Since then there have been a number of developments in the sector, including the preparation of a renewable energy sub-project by the Bank. Other donor agencies have also acted on recommendations made in the Assessment. These developments were summarized in a status report prepared by a November, 1983 mission (Mitchell). It also identifies further areas where technical assistance is required. The final report was sent to Bangladesh in April, 1984 for distribution to the Government and donor agencies.

Rwanda: Energy Assessment Status Report: May, 1984

A draft of this report, prepared on the basis of a September, 1983 mission was discussed and cleared with the Government in February, 1984. The final report is being issued. Two of the priority technical assistance activities identified in the report (preparatory work on improved charcoal stoves and more efficient charcoal kilns) are being undertaken with ESMAP financing.

June 1, 1984

ENERGY SECTOR MANAGEMENT ASSISTANCE PROGRAM

Status Report as of June 1, 1984 and Work Program to August 31, 1984

Country/Activity		Principal Staff	Stage Completed	Jun.	Jul.	Aug.	Comments
EAST AFRICA							
Burundi	Negotiations with Oil Companies	Fostvedt	(6)	7	8	9	
Burundi	Assistance for Energy Round Table	King/Petcu	(7)	8	9		
Burundi	Improved Charcoal Stoves	Floor/de Lepeleire	(6)	7		8	
Burundi	Institutional and Industrial Use of Peat	Floor	(2)				
Ethiopia	Power Efficiency Audit	Gulstone/Banks	(6)	7		8	
Ethiopia	Power Supply Options for Eresa ICS	Newcombe/Herman	(6)	7		8	
Kenya	Energy Assessment Status Report	Newcombe	(8)	9			Goovernment comments have been receivec and incorporated in final version whicl will be issued shortly.
Kenya	Solar Water Heating	Newcombe	(3)				Because of ongoing CIDA project only limited advisory support from ESMAP will now be required.
Kenya	Energy Efficiency in Tea Drying Industry	Newcombe	(1)		2	3	
Malawi	Institutional Review of Energy Sector	Ansari	(8)				Report circulation delayed pending clarification of changes in institutional arrangements. Review mission scheduled for June, 1984.
Rwanda	Charcoal Production	Floor	(4)	5		6	
Rwanda	Improved Charcoal Stoves in Kigali	Floor	(4)	5		6	
Seychelles	Power Efficiency Audit	Mitchell/Haal/ Nygren	(6)	7	8	9	Government has cleared mission's repor for final distribution following internal Bank review.
Sudan	Power Sector Efficiency Audit	Alahdad	(8)	9			Government has cleared report for distribution.
Sudan	Energy Assessment Status Report	Alahdad/Frueh	(5)		6		
Uganda	Energy Assessment Status Report	Alahdad/Frueh	(5)	6		7	
Uganda	Petroleum Import Arrangements	Alahdad/Ogmen	(7)				Output of this activity may be incorporated in the report on comprehensive institutional review.
Uganda	Institutional Review of the Energy Sector	Alahdad/Kennedy	(6)			7	
Zambia	Energy Assessment Status Report	Armar	(5)		6	7	
Zimbabwe	Energy Assessment Status Report	Armar	(8)		9		Awaiting Government clearance of the report.
Capco	Institutional Review	Gebhart	(6)				Committee's work extended to June. Report will be prepared thereafter.

Stages of ESMAP Activities

1. Identification, definition of assistance
2. Government request received
3. Terms of reference drafted
4. Activity Initiation Report issued
5. Consultant hired, staff identified
6. Mission in field
7. Draft report issued for internal review
8. Draft Report sent for Govt. clearance
9. Report agreed with Govt. and issued in final

Country/Activity		Principal Staff	Stage Completed	Jun.	Jul.	Aug.	Comments
WEST AFRICA							
Gambia	Solar Water Heating	Armar/Chronowski	(6)	7	8	9	
Gambia	Petroleum Supply Management	Armar/Consultant	(3)	4,5	6		
Gambia	Solar Photovoltaic Project	Armar/Consultant	(3)	4		5	
Senegal	Energy Assessment Status Report	Floor	(5)		6		Mission timing to be confirmed.
LAC							
Costa Rica	Identification of TA Requirements	Liebenthal/ Bachrach	(6)		7		
Haiti	Energy Assessment Status Report	Weimper/King	(6)	7	8	9	
EAST ASIA AND PACIFIC							
Indonesia	Energy Assessment Status Report	Ahmed/Mitchell	(6)	7	8	9	Government has cleared draft report prepared in the field for final distribution following internal Bank review.
Papua New Guinea:	Institutional Review of Energy Sector	Alahdad/Dumestre/ Prasad	(8)				Awaiting Government comments and clearance.
Papua New Guinea:	Electricity Tariffs and Regulation for Auto Generation	Alahdad/Dwek	(8)			9	Final report delayed to August to incorporate effect of revised power sector investment plan.
SOUTH ASIA							
Nepal	Energy Assessment Status Report	King	(5)		6		Mission timing subject to Government confirmation.
Sri Lanka	Industrial Energy Conservation	Gaskin	(5)	6	7		
Sri Lanka	Transport Energy Conservation	Gaskin	(5)				Mission scheduled for September.
Sri Lanka	Solar Water Heating	Floor	(3)				Awaiting Government clearance of TOR

Stages of ESMAP Activities

1. Identification, definition of assistance
2. Government request received
3. Terms of reference drafted
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5. Consultant hired, staff identified
6. Mission in field
7. Draft report issued for internal review
8. Draft Report sent for Govt. clearance
9. Report agreed with Govt. and issued in final

June 1, 1984
MAhmed:aaf.

Part III: Description
of Ongoing Activities

ENERGY SECTOR MANAGEMENT ASSISTANCE PROGRAM

Status Report as of June 1, 1984 and Proposed Work Program to August 31, 1984

I. EAST AFRICA

Burundi

Negotiations with Private Oil Companies The objective of this task was to provide technical advice to the Government to help prepare it for negotiations with a private oil company on exploration activity in Burundi. The substantive work has been completed and comprised missions by consultants in the areas of exploration strategy and preparation for negotiations with Amoco. Some reinterpretation of gravity data was also carried out. A report on this activity will be issued in June, 1984.

Assistance for Energy Round Table An ESMAP mission (Petcu/King) helped the Government prepare a portfolio of priority investment and technical assistance project profiles which were presented to potential donors at the UNDP sponsored Round Table meeting in Bujumbura in February, 1984. A number of donors have expressed interest in financing some of the identified projects. Comments have been received on draft Activity Completion Report, which is now being finalized.

Review of the Improved Charcoal Stove Program A mission (Floor/de Lepeleire) visited Burundi in April, 1984 to review existing efforts in developing and disseminating an improved charcoal stove for primarily urban households. A report detailing the mission's findings and identifying a two-year production and dissemination program for an acceptable and affordable stove design will be circulated in June for internal comments.

Study of the Promotion of Institutional and Industrial Use of Peat in Burundi To that end, the study would evaluate the technical and economic parameters associated with converting prospective industrial and institutional energy consumers to peat use. It will also define the investment requirements and other factors associated with a program of conversion for the priority users. Draft terms of reference will be circulated in June.

Ethiopia

Power Sector Efficiency Audit The field work for a power system efficiency audit has been completed (mission comprised Hughart, Gulstone, and Banks). The draft report will be ready for review in June. Some of the projects identified by this audit are being considered for inclusion in the third power project for Ethiopia.

Power Supply Options for ERESA ICS A March, 1984 mission carried out this study of the supply options for the Asmara region. The report, which will be circulated for review in June, 1984 compares various options for local generation with the alternative of interconnecting with the main grid in the Addis Ababa area.

Kenya

Energy Assessment Status Report An Energy Assessment Status Report, based on a staff mission (Newcombe) was sent to the Government for final clearances in August, 1983. The report has identified a number of areas where further technical assistance is necessary. A February, 1984 mission discussed the report and its follow up with the Government. Final Government comments have been received and the report will be distributed shortly.

Solar Water Heating A CIDA supported project will help to establish solar water heating as a major alternative to electric/oil-fired heaters in the residential/commercial sectors. The project builds upon one of the recommendations of the assessment report and is well conceived, structured and managed. However, the Government has asked for ESMAP assistance to provide technical and policy advice on this question on an ad hoc basis. The total input is unlikely to exceed two weeks per year. Terms of reference for the project have been drafted.

Energy Efficiency in Tea Drying Industry Recent discussions with Kenyan authorities have identified the need to develop a program to reduce the currently heavy dependence of the tea drying industry on petroleum fuels by improving the efficiency of their energy use and by making more use of biomass waste and other cheaper fuels. Terms of reference for such a study will be drafted shortly.

Malawi

Institutional Arrangements for Energy Planning The Government has prepared draft terms of reference and scope of responsibilities for the recently created Energy Unit in the Economic Planning Division and is currently in the process of staffing the Division. It has also sought funds under the ongoing Second Technical Assistance Credit for an Energy Planner/Economist to advise the Unit for a 24-month period. ESMAP staff support (Alahdad) will be utilized during June, 1984 to supervise the Energy Planning and Coordination component of TAC-II. The supervision mission will (i) review the status of staffing of the Energy Unit; (ii) discuss with the Government terms of reference and work program of the proposed Energy Planner/Economist; and (iii) review the CVs of the proposed head of the Unit and the Energy Planner/Economist.

Rwanda

Improved Charcoal Kiln Project The purpose of this activity is to prepare an action program, delineating (i) training and technical support requirements, for charcoal producers to have them adopt more efficient charcoal conversion techniques; (ii) appropriate government policies with regard to the procurement of construction material, credit facilities, taxation measures and other incentives to promote the use of improved kilns; (iii) an evaluation of the feasibility of linking the producers of fuelwood to the charcoal producers; and (iv) an analysis of the possible impact of the use of improved charcoal stoves in households as well as that of improved charcoal kilns on the output of charcoal production, price of charcoal and incomes of charcoalers. An Activity Initiation Report has been issued.

Improved Charcoal Stove Project The objective of this project is to propose an integrated program of action for the design, production, promotion, marketing and dissemination of charcoal stoves in Kigali. To that end, a pilot project will be started to test the market and consumer reactions to an improved charcoal stove design drawing heavily upon the experience of similar efforts in Burundi. Based on this experience a costed scheduled program of action will be formulated to establish a self-sustaining system for the production of improved charcoal stoves and their dissemination throughout the city. An Activity Initiation Report has been issued.

Seychelles

Power System Efficiency Improvement Study A mission including staff (Mitchell) and consultants (Haal, Nygren) visited the Seychelles during March 18-30 to define the scope, costs and benefits of a technical assistance project to improve the efficiency of the electric power system. A draft report was prepared and cleared with the Government in the field. The report is now being reviewed internally and its completion is expected in June, 1984. The following project components were prepared for funding and grant assistance for all of them is expected from the German Government: (i) development of a cost related tariff structure; (ii) a training program in the optimal operation of diesel-fired generating units; (iii) development of an efficient maintenance system plan; (iv) improvement of the power factor through the installation of capacitors; and (v) use of micro-computer facilities for monitoring system losses, maintenance data, etc.

Sudan

Power System Efficiency Audit The objective of this audit is to define low cost short-term measures to implement cost effective modifications to system facilities, operations and construction standards that will improve the technical efficiency of the power system and reduce losses. The audit was conducted by a two-man team (Banks and Colette) which visited Sudan in August, 1983. Their report has been discussed with the Government by a mission (Alahdad) during March, 1984 and after incorporating agreed changes, the report has been circulated to the Region for clearance after which it will be issued for final distribution under ESMAP in early June, 1982.

Energy Assessment Status Report In response to a request from the Government, a mission (Alahdad) visited Sudan in March, 1984 to discuss possibilities of initiating further technical assistance under ESMAP to define projects/feasibilities which could be financed from bilateral and multilateral funds. As the next step in that exercise, a mission will visit Sudan in July, 1984 to prepare an Energy Assessment Status Report which will review the progress made in implementing the recommendations of the July, 1983 energy assessment, and outline the priority areas for further technical assistance.

Uganda

Energy Assessment Status Report In response to a request from the Government, a mission (Alahdad) visited Uganda in March, 1984 to discuss possibilities of initiating further technical assistance under ESMAP to define projects/feasibilities which would be financed from bilateral and multilateral funds including the Bank's current Technical Assistance Credit. A number of areas for ESMAP support were jointly identified and a tentative program prepared for which the Government initiated a formal request. These included institutional strengthening of energy sector management and energy conservation in the industrial and agro-industrial sectors. The institutional review has already started and the other priorities will be confirmed by a June, 1984 mission (Alahdad and Consultant Frueh) which will prepare an Energy Assessment Status Report for the country.

Petroleum Import Arrangements The Assessment Mission endorsed an urgent Government request for assistance in rationalizing procedures and documentation for imports of petroleum products by private marketing companies. This was subsequently provided through a three-week mission in January/February 1983, by a consultant expert (Ogmen). The results of his work and a proposal for longer term assistance to the Bank of Uganda's Petroleum Desk is summarized in a report which was circulated within the Bank for comments. However, further processing of this report has been held up pending a decision by the Government on the allocation of responsibility for petroleum import management between the Bank of Uganda and the Ministry of Power, Posts and Telecommunications (MPPT). The matter has now been resolved and the Government has decided that the Oil Desk in the Bank of Uganda will be a subsector support agency providing data and analysis to MPPT which is the agency responsible for energy policy. Accordingly, the revision of the consultant's report on Petroleum Import Arrangements is being carried out in conjunction with the Energy Sector Institutional Review (see below) which is already in the field.

Institutional Review of the Energy Sector The July, 1983 Assessment Report identified this task as an area of high priority and this was confirmed by a subsequent March, 1984 mission. Focussing primarily on the establishment and operation of the Energy Department in MPPT, the review will recommend appropriate organizational structures, roles, responsibilities and inter-relationships in energy-related institutions and identify staffing, technical assistance and training needs. The mission (Alahdad and Consultant Kennedy) has been fielded and will return in mid-June to prepare its report.

Zambia

Energy Assessment Status Report A mission has been tentatively scheduled for July, 1984 to prepare this report and to assess the scope of ESMAP assistance for energy conservation, and for institutional assistance to the NEC. A request has been received from the Government (May, 1984) for assistance in the energy conservation area.

Zimbabwe

Energy Assessment Status Report Government clearance of the draft report is still awaited. A follow-up mission (Armar) is now planned for June, 1984 to expedite final preparation of the report and to discuss the approach and training for technical assistance priorities identified in the report. These priorities have been included in the UNDP Country Program, and could be executed under ESMAP. An Aide Memoire on the possible scope of an energy efficiency program in Zimbabwe has been prepared by INDEC for initial discussions with the Government.

CAPCO: Institutional Review The Governments of Zambia and Zimbabwe have asked the Bank to assist in the work of a bilateral commission which has been set up to review the future role and functions of the Central African Power Company (CAPCO). ESMAP funding is being used to finance the services of the outside chairman (Damry) for this commission. The commission's work has been extended to June, 1984 and a report on this activity will be prepared thereafter.

II. WEST AFRICA

Gambia

Solar Water Heater Retrofit Project A mission (Armar and Chronowski) visited the Gambia in April, 1984 to carry out the preinvestment analysis of a project to convert to solar the existing central water heating systems (diesel oil-fired or electric) at five major tourist hotels, and to review alternative institutional arrangements and funding mechanisms for the implementation of the proposed project. The estimated cost of the project is under US$1.0 million inclusive of technical assistance. The payback on the retrofits is expected to be under two years. The mission's work will also result in a separate report which will outline the steps and technical assistance requirements to promote the use of solar water heaters in other smaller hotels, public institutions and the residential sector.

Petroleum Supply Management Assistance This technical assistance will help the Government in: (i) the evaluation of alternative arrangements for the procurement of petroleum supplies to the Gambia; (ii) the establishment of improved procedures for internal management of stocks; (iii) the development of a strategy for implementing the Government's decision to relocate the bulk storage depot for safety reasons; and (iv) the formulation of a mechanism for routine review and adjustment of

petroleum prices in the country. A mission (Armar) which visited the Gambia in April, 1984 prepared and obtained Government clearance for a detailed terms of reference for the proposed activity. These will now be circulated for review inside the Bank.

Solar Photovoltaic Applications Project In response to a Government request, the mission (Armar) which visited the Gambia in April, 1984 had preliminary discussions with the Departments of Telecommunications and of Health, on a pre-investment study. The Government has cleared the terms of reference for this study which will review the feasibility of using solar photovoltaic power units for specialised needs in the health centers and in the rural VHF radio-telephone network. An activity initiation report will be issued shortly for internal review.

Senegal

Energy Assessment Status Report The July, 1983 Energy Assessment Report has generated considerable interest in follow up both within the Bank and among bilateral donors (notably Canada and France). However, it is not clear as to what concrete follow up is actually taking place and the Government has recently requested ESMAP assistance to help organize the follow up to the report. The proposed status report mission, tentatively scheduled for July will help to clarify the situation and define the scope of further ESMAP assistance in Senegal.

III. LATIN AMERICA AND THE CARIBBEAN

Costa Rica

Identification of Technical Assistance Requirements A mission (Liebenthal, Bachrach and Chronowski) visited Costa Rica in May to review with the Government a number of technical assistance possibilities whose priorities had been identified in the recent Energy Assessment Report. As a result of the discussions, the mission is now preparing a package of terms of reference for four technical assistance projects which will be circulated to potential donors: (i) a study on the fiscal policy for petroleum fuels; (ii) the establishment of a maintenance program for buses; (iii) a program to produce charcoal from forest residues; and (iv) the improvement and integration of ICE's planning tools. The package of TORs will be circulated for review in June.

Haiti

Energy Assessment Status Report A draft of this report, prepared on the basis of a February, 1984 mission (Weimper/King) will be circulated within the Bank for comments in June. The report identifies several priority technical assistance activities in the areas of woodfuels, bagasse, solar energy, and energy conservation.

IV. EAST ASIA AND PACIFIC

Indonesia

Energy Assessment Status Report A mission (Ahmed and Mitchell) visited Indonesia during May, 1984 to prepare this report and to identify the potential for ESMAP assistance in the country. The focus of the ESMAP assistance identified is in the area of improving energy efficiency in power generation, rural industry and cookstoves. A draft report was prepared and discussed the Government in the field. Their comments and some additional information are being incorporated in a revised draft which will be circulated shortly for internal review and clearance.

Papua New Guinea

Institutional Review of the Energy Sector The June, 1983 assessment status report mission identified this task as one of high priority. The Government requested that such a review be carried out under the ESMAP. A mission (Prasad, Alahdad and Dumestre) visited PNG in October/November, 1983 to conduct this review. Their draft report on institutional restructuring, staffing, training and technical assistance was sent to the Government in January, 1984. The Government's preliminary comments were received in May, 1984 and additional comments are expected shortly, after which the report will be finalized.

Electricity Tariffs and Regulations Including Cogeneration and Autogeneration A number of electricity autogeneration and cogeneration opportunities have been identified but are not being exploited because of the inappropriate tariffs/regulations governing this activity. A consultant mission visited Papua New Guinea in November, 1983 to assist the Government/ELCOM in reviewing and modifying the tariff structure based on long-run marginal costs. A draft report on this activity was circulated in the Bank for a working level review and a number of comments were received. The draft report and the Bank's comments were discussed with the Government by the Bank Power III project identification mission in April, 1984. It was agreed with the Government that the report would need to be revised on the basis of the results of the ongoing update of PNG's power development plan expected to be ready in mid-1984. An Activity Progress Report was issued in May, 1984 which recommended that after the updated power plan is available, the tariff study be finalized in consultation with Bank staff in August, 1984, incorporating the comments and suggestions of the Bank and the PNG Government.

V. SOUTH ASIA

Nepal

Energy Assessment Status Report A mission has tentatively been scheduled for July, 1984 to prepare this report and to identify the potential for ESMAP assistance in the country.

Sri Lanka

Industrial Energy Conservation Study This is a technical assistance project which will identify large retrofitting projects in various industries in Sri Lanka. ESMAP consultants will assist the Government in preparing project briefs and terms of reference for approximately 18 industrial plants. The project briefs will be offered to donors so that the full feasibility study can be completed. The feasibility study for each project will identify the total funding requirements as well as the economic viability of the project. Field work is in progress and a staff mission (Gaskin) is to visit Sri Lanka in early June to review the progress of the consultants' efforts.

Transport Energy Conservation Study This project will identify short and long-term measures to improve the energy efficiency of the transport sector in Sri Lanka. The study aims to identify specific projects which will reduce the country's consumption of imported oil products. Presently the selection of consultants is being carried out. A mission (Gaskin) will visit Sri Lanka in early June to discuss the timing of the main mission and the selection of the consultants with the Government.

Solar Water Heating Project The objective to this study is to determine the economic feasibility and market potential for domestic, commercial and industrial applications of solar water heating in Sri Lanka. This will include an assessment of the possibility of local production as well as of the import of solar water heaters and an evaluation of the need for Government involvement in promoting this application. Draft terms of reference have been sent to the Government for their comments and for their views on the appropriate timing for such an exercise.

MAhmed:aaf.
June 1, 1984

Part IV

Joint UNDP/World Bank
Energy Sector Management Assistance Program

CURRENT OPERATIONS, FOLLOW-UP PROJECTS AND COFINANCING OPPORTUNITIES

QUARTERLY INFORMATION BRIEF

JUNE 1, 1984

Energy Assessments Division
Energy Department
The World Bank
Washington, D.C. 20433

ENERGY SECTOR MANAGEMENT ASSISTANCE PROGRAM

Background

The Joint UNDP/World Bank Energy Sector Management Assistance Program (ESMAP), started in April 1983, assists countries in implementing the main investment and policy recommendations of the Energy Sector Assessment Reports produced under another Joint UNDP/World Bank program. ESMAP provides staff and consultant assistance in formulating and justifying priority pre-investment and investment activities and in providing management, institutional and policy support. The reports produced under this Program provide governments, donors and potential investors with the information needed to speed up project preparation and implementation. ESMAP activities can be classified broadly into three groups:

- Energy Assessment Status Reports: these evaluate achievements in the year following issuance of the original assessment report and point out where urgent action is still needed;
- Project Formulation and Justification: work designed to accelerate the preparation and implementation of investment projects; and
- Institutional and Policy Support: this work also frequently leads to the identification of technical assistance packages.

The Program is a major international effort and, while the core finance has been provided by the UNDP and the World Bank, important financial contributions to the Program have also been made by a number of bilateral agencies. Countries which have now made or pledged initial contributions to the programs through the UNDP Energy Account, or through other cost-sharing arrangements with UNDP, are the Netherlands, Sweden, Australia, Switzerland, Finland, United Kingdom, Denmark, Norway and New Zealand.

Quarterly Information Brief

The objective of this quarterly brief is to inform donor agencies and potential investors of current ESMAP operations and to bring to their notice investment and technical assistance projects identified through the ESMAP. These projects are listed in two groups.

Projects for which the prefeasibility work has already been carried out under the ESMAP and for whose implementation the governments concerned are currently seeking financing are listed in Part I. The involvement of ESMAP staff in the further preparation/implementation/-

supervision of these projects is possible but only if the government and potential financing agencies so request. However, ESMAP staff are available to brief interested agencies on the objectives and scope of these projects and to assist them in contacting the relevant officials in the country.

- Feasibility studies or pilot projects which have been identified and agreed as priority activities in the countries which, because of their cost ($150,000-500,000), cannot be financed entirely from ESMAP's core resources. For these activities, a selected set of which are described in Part II, we are seeking cofinance from interested agencies, who could also implement the investment project generated and justified by these activities of the government so requests. Detailed descriptions of these activities and of the cofinancing arrangements under ESMAP are available on request.

Finally, Part III of this brief lists the ongoing and planned ESMAP activities and identifies those activities which are expected to define follow-up technical assistance or investment requirements. They are included here to help donor agencies program their future assistance activities, thereby facilitating the early implementation of these projects once the ESMAP pre-investment work has been completed.

Further Information

For additional information on any of these projects or on the ESMAP or to obtain copies of completed ESMAP reports please contact:

Julian Bharier or Masood Ahmed
in
Energy Assessments Division
Energy Department
World Bank
1818 H Street, N.W.
Washington, D.C. 20433

Telephone: (202) 477-4545

INVESTMENT AND TECHNICAL ASSISTANCE PROJECTS WITH COMPLETED PREFEASIBILITY STUDIES PREPARED UNDER ENERGY SECTOR MANAGEMENT ASSISTANCE PROGRAM

1. PANAMA: Power System Loss Reduction Project (ESMAP Report Number 004/83). This study identified two projects for immediate implementation:

(a) Distribution System Improvement Program - comprising the analysis of all distribution circuits, installation of capacitors and reconductoring etc. The estimated cost of the project is $4.5 million.

(b) Rehabilitation of the BLM Oil-fired Generation Plant - comprising replacement of burners, air preheater seals, repair and upgrade instrumentation, controls, insulation and cooling water system. The estimated cost of the project is $1.0 million. The payback period is less than one year.

Current Status: The Panamanian Power Entity (IRHE) has begun work on the implementation of some of these recommendations.

2. ZIMBABWE: Power System Loss Reduction Project (ESMAP Report Number 005/83). This study identified a Distribution System Betterment Project comprising a package of engineering services and software, and capacitors, conductors and metering equipment aimed at reducing the losses in the Electricity Supply Corporation (ESC) and Municipality distribution systems. The estimated cost of the project is $3.3 million (including $0.5 million in local currency).

Current Status: On the basis of available information the implementation of this project is still pending because of ongoing changes in the institutional structure of the power sector, in particular the creation of a new power utility the Zimbabwe Electric Supply Corporation.

3. SRI LANKA: Power System Loss Reduction Project (ESMAP Report Number 007/83). This report identified two projects.

(a) Distribution System Rehabilitation Project - the first phase of this project would be implemented over three years and would include the establishment of a Distribution Engineering Department in the Ceylon Electricity Board (CEB), the engineering and installation of about 230 MVAR of capacitors, reconductoring/rebuilding of about 200 km of 33 kV and 11 kV line, and 1,700 km of new line, and the provision of metering equipment. The estimated cost

of Phase I is $25 million of which about $15.5 million would be foreign costs.

(b) Kelanitissa Steam Plant Rehabilitation Project - this project would improve the operating efficiency and effective capacity of this 25 MW oil-fired plant. The project would include the replacement of burners, valves and lines and the rehabilitation of control systems, variable speed fan drives and the chlorination system. Consultants would be required for the preparation of detailed designs and possibly for the supervision of contractors carrying out the rehabilitation work. The estimated cost of the project is $1.5 million (of which 90% would be in foreign exchange). The project has a payback period of less than one year.

Current Status: The project could be implemented in 1985 when the Kelanitissa plant could be released from service by the availability of new hydro stations. The CEB is seeking funding for the implementation of the project.

4. MALAWI: Technical Assistance Package to Improve the Efficiency of Fuelwood Use in the Tobacco Industry (ESMAP Report Number 009/83). This report evaluates the economic feasibility of alternative technical options for improving the efficiency of wood use in the tobacco curing industry and recommends a two-phase program to introduce the most economic set of improvements. The first phase comprises a pilot project to install doors, grates and ventilators in 40 low efficiency barns and to monitor their energy savings over a two-year period; the setting up of an effective extension, monitoring and evaluation capability both for the pilot project and for any subsequent program; and support for further testing and research of other technical packages. The estimated cost of this first phase is $300,000 and it would be implemented over a two-year period. Thereafter, a full scale program of energy efficiency improvements of the tobacco barns could be launched over a five to seven-year period at an estimated cost of over $10 million.

Current Status: Phase I of the project is under implementation with assistance from an IDA credit.

5. BURUNDI: Petroleum Supply Management Technical Assistance Project (ESMAP Report Number 012/84). This study reviews existing and alternative arrangements for the import and distribution of petroleum products in Burundi and sets out a number of recommendations on diversifying supply routes and strengthening the government's capacity to formulate and implement a cost effective petroleum supply strategy. The report also defines a technical assistance package costing $135,000 which would provide the government with the services of advisory consultants to help implement these measures.

Current Status: The OPEC Fund has expressed interest in financing the technical assistance requirements identified through this report.

6. KENYA: Power System Efficiency Improvement Project (ESMAP Report Number 014/84). This report identified two projects:

(a) A Distribution Loss Reduction Project - comprising engineering services and investment in capacitors, reconductoring etc. which would be implemented over a 18-24 month period. The estimated cost of the project is $7.7 million, of which about 90% would be in foreign exchange; the payback period is approximately one year.

Current Status: The Kenya Power and Light Corporation is currently seeking funds to implement this project.

(b) Kipevu Steam Plant Rehabilitation Project - this project would improve the operating efficiency of this oil-fired plant and raise its available capacity by 12 MW. The project would comprise repairs and rehabilitation of individuals generating units as well as of the condenser/-cooling and water treatment systems. The estimated cost is $2.8 million; the payback period is under two years.

Current Status: The Kenya Power and Light Corporation is seeking funds to implement this project.

POTENTIAL COFINANCING OPPORTUNITIES

The bulk of ESMAP activities cost under $100,000 each and are funded entirely from the Program's own resources. However, ESMAP staff have also identified a number of larger feasibility studies or pilot projects which could be implemented on a cofinancing basis with interested donor agencies. These activities would, however, continue to be managed by the staff working on ESMAP. Cofinancing support is currently being sought for the following ESMAP projects:

Niger: Improved Urban Cookstoves Project

The objective of this project is to establish a self-sustaining production and marketing system for the dissemination of portable and prefabricated improved woodstoves. The project will build upon the successful experience gained during the development and dissemination of the "Ouaga stove" in Upper Volta. The project would be implemented in two phases. Phase I will establish the feasibility of the approach and carry out production and marketing on a pilot basis over an eight-month period at a cost of $150,000. Subject to the successful evaluation of the first phase, Phase II will expand these efforts to a larger scale over an 18-month period at a cost of $350,000. The EEC is considering to contribute $100,000 to the cost of Phase I, and is likely to contribute to Phase II. Cofinancing support for both phases is also likely to be forthcoming from the German Government.

Kenya: Coal Import Action Plan

This study will assist the Government in formulating an overall strategy and action plan for increasing the use of imported coal in the industrial (and potentially) power sectors. The study will evaluate the potential market for coal, the infrastructure and handling required to meet this market and the alternative mechanisms for importing, distributing and financing coal supplies. The study is expected to cost $500,000 and would be implemented over a 12-month period. Discussions on a potential contribution are underway with CIDA. The project will identify a series of infrastructure and plant modification projects amounting to between $100-200 million.

Kenya: Feasibility Study of Peri-urban Fuelwood Plantation

This study will build upon the work done by the Government of Kenya and various donor agencies by undertaking a preinvestment analysis for 25,000 ha of peri-urban plantations to be established by 1990 and by identifying the key policies and incentive systems required to ensure the timely implementation of this program. The study will also prepare a broader plan of action for the longer term and will help the Government to define its role in investment planning and implementation in this important subsector. The project will take about eight months to complete and is expected to cost $260,000. Discussions on cofinancing support are underway with the Canadian and Dutch governments. The project will design fuelwood plantation and infrastructure expected to cost between $34-45 million.

Ethiopia: Crop Residue Briquetting Project

This project will evaluate the technical and economic feasibility of utilizing surplus coffee husks and other crop residues as an industrial and household fuel. The project would allow for the installation of two coffee husk briquetting presses and for monitoring the production and marketing of their output to selected household and industrial users over a 12-month period. The project would also fund a detailed feasibility study of the optimum technical package for harvesting, processing and storing cotton, corn and wheat crop residues. The project would cost about $250,000. Cofinancing contributions are being sought. The expenditure anticipated on the overall program of briquetting envisaged if all pilot plans are successful is between $50 and $70 million.

Ethiopia: Improved Stoves Project

This project will help to establish a self-sustaining improved stoves program for urban households building upon the existing artisanal capacity for stove production. The first phase of the project is estimated to cost $200,000 and to last about 12-15 months. The ILO have agreed to contribute staff resources for the project but additional cofinancing support is required. Projects ultimately arising from this pilot phase will cost between $20-30 million.

****

Detailed profiles for the above projects, as well as additional information on opportunities and mechanisms for cofinancing of ESMAP projects can be obtained from either Julian Bharier (477-2781) or Masood Ahmed (477-4545) in the Energy Assessments Division of the World Bank.

ENERGY SECTOR MANAGEMENT ASSISTANCE PROGRAM
ACTIVITY STATUS AS OF JUNE 1, 1984

Country	Project	Report 1/ Completed	Work in Progress	Work to start in next 3 Months	Technical Assistance or Investment Follow-up Identified
1. Project Formulation and Justification					
Burundi	Industrial Use of Peat			X	X
Burundi	Improved Charcoal Stoves		X		X
Costa Rica	Identification of Technical Assistance Projects		X		X
Ethiopia	Power Sector Efficiency Audit		X		X
Ethiopia	Power Supply Options for Eresa ICS		X		X
Gambia	Solar Water Heating		X		X
Gambia	Solar Photovoltaic Project		X		X
Kenya	Power Sector Efficiency Audit	X			X
Kenya	Advice and Support for Implementation of Solar Water Heating Project		X		
Kenya	Energy Efficiency in Tea Drying			X	X
Malawi	Preparation of Tobacco Industry Energy Efficiency Program	X			X
Panama	Power Sector Efficiency Audit	X			X
Rwanda	Improvement of Charcoal Prod.			X	X
Rwanda	Improved Charcoal Stoves			X	X
Seychelles	Power Sector Efficiency Audit		X		X
Sri Lanka	Industrial Energy Conservation		X		X
Sri Lanka	Power Sector Efficiency Audit	X			X
Sri Lanka	Solar Water Heating Project			X	
Sri Lanka	Transport Energy Conservation			X	
Sudan	Power Sector Efficiency Audit		X		X
Zimbabwe	Power Sector Efficiency Audit	X			X

1/ Report and follow-up agreed with Government.

Country	Project	Report 1/ Completed	Work in Progress	Work to start in next 3 Months	Technical Assistance or Investment Follow-up Identified
2. Institutional and Policy Support					
Bangladesh	Priority Investment Program for Energy		X		X
Burundi	Assistance for Preparing Energy Project Profiles for Donors Conference		X		X
Burundi	Assistance for Petroleum Supply Management	X			X
Burundi	Assistance for Developing Petroleum Exploration Strategy		X		
Gambia	Petroleum Supply Management		X		X
Malawi	Institutional Review and Identification of Technical Assistance Requirements		X		X
Papua New Guinea	Institutional Review and Identification of Technical Assistance Requirements		X		X
Papua New Guinea	Advice on Electricity Tariffs and Regulations for Auto-Generation		X		
Sudan	Management Assistance to the Ministry of Energy and Mining	X			X
Uganda	Advice on Petroleum Import Arrangements		X		X
Uganda	Institutional Review of the Energy Sector		X		X
Zambia/ Zimbabwe	Capco: Support to bilateral commission reviewing future role and functions		X		X

1/ Report and follow-up agreed with Government.

Country	Project	Report 1/ Completed	Work in Progress	Work to start in next 3 Months	Technical Assistance or Investment Follow-up Identified
1. Energy Assessment Status Reports					
Bangladesh	Status Report	X			
Burundi	Status Report	X			X
Haiti	Status Report		X		X
Indonesia	Status Report		X		X
Kenya	Status Report		X		X
Malawi	Status Report	X			X
Mauritius	Status Report	X			X
Nepal	Status Report			X	
Papua New Guinea	Status Report	X			X
Rwanda	Status Report	X			X
Senegal	Status Report			X	
Sri Lanka	Status Report	X			
Sudan	Status Report		X		
Uganda	Status Report		X		
Zambia	Status Report			X	
Zimbabwe	Status Report		X		X

1/ Report and follow-up agreed with Government.

MAhmed:aaf
June 1, 1984

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ember 26-30, 1984
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Fort Lauderdale, Florida 33316
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Eighth Annual
INTERNATIONAL SCIENTIFIC FORUM
ENERGY: A NON-ISSUE?
THE CONSEQUENCES OF BEING WRONG

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INSTITUTION ENERGY DEPT, WORLD BANK

INSTITUTION ADDRESS WASHINGTON DC

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INTERNATIONAL SCIENTIFIC FORUM

ENERGY: A NON-ISSUE?
THE CONSEQUENCES OF BEING WRONG

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Center for Theoretical Studies
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Coral Gables, Florida 33124
305/284-4455

April 26, 1984

Mr. Masood Ahmed
Energy Department
The World Bank
1818 H Street, N.W.
Washington, D.C. 20433

Dear Mr. Ahmed:

On behalf of the Forum Planning Committee, I am very pleased to invite you to participate in our eighth annual Forum. I have enclosed the preliminary program and a registration form, along with a hotel reservation form.

If you have any opinions or suggestions to improve the program content, I would like to hear from you. Also, upon your request, we will be glad to send you the next preliminary program which will be updated at two-month intervals.

We look forward to receiving your completed registration materials soon.

Sincerely yours,

Behram N. Kursunoglu
Forum Chairman

ISF:BNK: APC

Enclosures

November 26-30, 1984
Pier 66 Hotel and Marina
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PRELIMINARY PROGRAM-March 1, 1984
(This program will be updated May 1, 1984)

The people listed below with asterisks have agreed to serve in the indicated capacities. The others were suggested for invitation by the Forum Planning Committee.

Monday, November 26

pm: Prologue Session (approx. one hour)
*Edward Teller, Hoover Institution, Stanford
Other speakers to be designated

pm: ENERGY SUPPLY NETWORK CHANGE--1974-1984
VULNERABILITY OF USERS AND SUPPLIERS

Moderator and keynote speaker: *Rene Ortiz, Quito, Ecuador
Organizers: *John Savoy, Sun Company, Inc.
*Nazli Choucri, Massachusetts Institute of Technology

Annotators: Robert L. Hirsch, ARCO Oil and Gas Company
Glen E. Schuler, Tennessee Gas Transmission

6-7pm: Cocktail Reception

Tuesday, November 27

am/pm: WHAT WE CAN LEARN FROM A COMPARISON OF THE EUROPEAN AND U.S. NUCLEAR POWER EXPERIENCE

Moderator and keynote speaker: *Hans A. Bethe, Cornell University
Organizers: *C. Pierre Zaleski, A. N. R. T., Paris
*John West, Combustion Engineering, Inc.

Dissertators: Wolf Häfele, Kernforschungsanlage Jülich, West Germany
*Chauncey Starr, Electric Power Research Institute
*Georges Vendryes, Commissariat à l'Énergie Atomique, Paris
*John H. Crowley, United Engineers & Constructors, Inc.

Annotators: Kjell Håkansson, Studsvik Energiteknik AB, Sweden
Ronald S. Wishart, Jr., Union Carbide Corporation

8:00pm: FORUM BANQUET

Wednesday, November 28

am: FINANCING OF ENERGY SUPPLIES

Moderator and keynote speaker: Jacques de Larosiere, IMF, Washington, D.C
Organizers: *A. J. Meyer II, The Chase Manhattan Bank, N. A.
*Jean Couture, Institut Français de l'Énergie, Paris

Annotators: Thomas W. Cunnington, Cyton Corporation
Robert M. Herzog, Resource Management Technologies, Inc.
David S. Barmby, Sun Company, Inc.

AFTERNOON AND EVENING FREE

Thursday, November 29

am: REGIONAL AND GLOBAL EFFECTS OF ENERGY CONVERSION

Moderator and keynote speaker: *Alvin Alm, Environmental Protection Agency, Washington, D.C.

Organizers: *Niels E. Busch, Risø National Laboratory, Denmark
*Henry E. Thomas, Trade Management International, Ltd.

Annotators: Charles F. Cook, Phillips Petroleum Company

pm: THE COST OF DEVELOPMENT FOR DEVELOPING COUNTRIES

Moderator and keynote speaker: Abdus Salam, International Centre for Theoretical Physics, Trieste

Organizers: *Marcelo Alonso, Florida Institute of Technology
*Mariano Bauer, Universidad Nacional Autonoma, México

8:30pm: Lecture by a distinguished scientist on a recent breakthrough in science (astrophysics, genetics, elementary particles, fusion, etc.)

Friday, November 30

am: INTERNATIONAL COOPERATION ON LARGE R&D PROJECTS

Moderator: *Robert Hofstadter, Stanford University

Organizers: *Anthony J. Favale, Grumman Aerospace Corporation
*Jean Pellerin, Commissariat à l'Énergie Atomique, Paris,

Dissertator: *Alvin Trivelpiece, Department of Energy, Washington, D.C.
*Georges Vendryes, Commissariat à l'Énergie Atomique, Paris

Annotator: Walter F. Allaire, Allied Corporation

AFTERNOON AND EVENING FREE

Forum Rapporteur: *Nazli Choucri, Massachusetts Institute of Technology

* * *

Moderator: Organizes a Session, which includes the selection of Dissertators, suggestions for Annotators, and allocation of times for presentations. Delivers a paper in own Session, if desired, or makes general opening remarks.

Dissertator: Presents a paper in a given Session and submits it for publication in the Forum proceedings at the conclusion of the Forum.

Annotator: Comments on the dissertators' presentations or asks questions on the same upon invitation by the moderator.

Rapporteur: Prepares and presents a summary of the entire Forum.

The INTERNATIONAL SCIENTIFIC FORUM is a prestigious annual Forum on energy which is independent and international in scope. Its primary purpose is to address the critical issues in energy that are of interest to governments and societies from the scientific and engineering points of view. A critical issue is defined as one that presently affects us or will affect us in the future which we must address now. Issues are technical, economic, and institutional. The Forum is supported by foundations, industry, governments, and individuals.

"WHAT THE BANK DOES IN ENERGY AND WHY"

Presentation by
Masood Ahmed
Deputy Division Chief
Energy Assessments Division

in Charlottesville on May 22, 1984

The subject of the article that was circulated to you was "what the Bank does in energy and why". Now, most of us have a good understanding of what the Bank's energy program is, and most of the time we're also clear of the "why" - although I must admit that on occasion the logic of a specific action is not immediately apparent. Therefore, rather than summarize the article for you (which you've no doubt already read!) what I'd like to do is to talk about some of the main trends that have characterized the recent evolution of the Bank's energy program, and to raise some questions which are posed by these trends in terms of the future development of the program.

The first trend that is apparent is the Diversification and Growth of Bank Energy Lending in recent years. This is chronicled in a number of documents but its still striking to note how quickly and how far this process has extended. Five years ago power accounted for 95 percent of energy lending and we still had not lent for petroleum exploration or coal or energy efficiency projects. Total energy lending was $1.5 billion or 15% of all lending. Now, we lend about twice as much and more - power lending accounts for over a third of the energy program. The oil and gas program has grown most quickly now amounting to about $1 billion per year and itself comprising of many more types of

projects. Refinery improvement and rehabilitation, coal, geothermal, industrial energy efficiency, fuelwood, and renewable energy lending have also become more important. These factors are reflected in the composition of the FY83 energy lending program. Of the 40 projects approved in that year, 15 were for electric power, three for coal, five for refineries and other energy related industry and 17 for oil and gas covering exploration promotion and exploration, as well as natural gas and oil development projects.

The second trend, which is also in a sense a dimension of the diversification of the Bank's energy program, is the growing importance and volume of technical assistance activities. The most visible examples are the Energy Assessment and Sector Management Assistance Programs. At the time of the first EGY retreat exactly three years ago, we did not have a single blue cover assessment report and we were having considerable problems in getting the concept of and the need for energy assessments accepted inside the Bank. Today we have over 30 completed assessment reports and there is a much wider consensus in their usefulness both inside and outside the Bank. Similarly the Management Assistance Program which was then a very far off glint in the eye is now operational and has 40 different activities underway in 20 countries.

Important as these programs are, in dollar terms they are dwarfed by the increase in technical assistance funded through lending operations. In writing the article I was struck to note that in FY83 the total volume of technical assistance included in Bank energy projects was of the order of $450 million. That's the equivalent of about 5,000 man-years of technical assistance and raises important questions about

whether we are equipped and budgeted to properly appraise and supervise this enormous volume of labor intensive work.

These two trends, the diversification of lending and the growing diversity and volume of technical assistance, have important implications for the future. Joe Wood's speech which was circulated to us refers to the need to view the Bank increasingly as a multi-service institution providing a variety of services packaged to suit the specific needs of individual countries. Well, in the energy sector, I think that we have already become a multi-service agency with a range of products stretching from financial support for energy supply projects in coal, power, oil and gas etc. - to assistance in developing a national energy strategy to technical assistance in defining priority investment projects or policy options. This is obviously a positive development but it also raises a number of organizational budgetary and other questions because the challenge now is to define and deliver a multi-service assistance program in each country which responds effectively to the priority needs of that country and makes the best use of the limited resources that the Bank has available for such assistance. In effect what this means is that the planning and programming of each type of product - assessments, or different types of energy projects, or whatever - needs to flow increasingly from a determination of priorities for assistance at the country level. This increasing emphasis on a "country focus" for our various energy operations can be classified as a third trend which will increasingly characterize the Bank's energy program.

A direct reflection of this trend is the proposed program of Energy Strategy Papers which will help to identify the optimum Bank

assistance package in a selected number of countries. However, in my own view, ensuring the effective delivery of such a package may require further changes in terms of the organization and budgeting of our work and the allocation of resources and responsibilities for its execution.

The fourth aspect of the Program is the emphasis on using the Program as a catalyst for mobilizing additional external resources. This is simply a reflection of the fact that the Bank's own financial contribution for energy development in the developing countries is - and will continue to be - a small fraction of the total foreign exchange requirement for this purpose - between 5 percent and 10 percent depending on which estimate you use of the total investment requirements for energy. The response to this, has been to pursue a vigorous program of cofinancing resulting in a ratio of more than 1:1 for cofinancing in the energy sector over the last four years. In the future, this should be given an additional fillip by the use of the recently introduced "B" loans, which have already been applied successfully to the energy sector in an Industrial Energy Diversification Project in Hungary.

A second response to the resource mobilization issue is of course the use of projects and policies to promote direct private investment in energy development in the LDC's. This applies mostly to the petroleum sector and Philippe will probably have more to say on it.

The final point that I would raise on the Program is that the selection of projects is increasingly affected by the need to show that the Bank's involvement in the project results in a significant non-financial contribution. Examples of this non-financial contribution include better project selection, design and implementation; institution

building; policy advice or technology transfer. The particular type of contribution may vary but what is being increasingly required is the demonstration that at least some of these issues will be directly affected by the Bank's involvement. Again, this is an issue which has affected the oil and gas program most of all and will be covered by Philippe so I wont say much about it except to note that the rigorous application of this principle to some of the projects in the other agency sub-sectors would probably be an interesting exercise.

To sum up, the five main trends characterizing the recent evolution of the Bank's energy program can be summarized as follows:

(i) The Growth and Diversification of Lending;

(ii) The Increasing Volume and Importance of Technical Assistance;

(iii) The Emphasis on a "Country Focus" for our varied operations;

(iv) The Emphasis on Resource Mobilization through cofinancing and the Promotion of Direct Private Investment;

(v) The Emphasis on Ensuring that the Bank's participation in a specific projects generates significant non-financial benefits.

I hope that some of the questions that I have raised on these features will serve as a stimulus for our discussions later on this morning.

MAhmed:aaf.

May 21, 1984

FORM NO. 75
(6–83)

THE WORLD BANK/IFC

ROUTING SLIP	DATE: May 15, 1984

NAME	ROOM NO.
Messrs. A. Pertuzio, J. Taylor, and C. Duval (LEG)	

	APPROPRIATE DISPOSITION		NOTE AND RETURN
	APPROVAL		NOTE AND SEND ON
	CLEARANCE		PER OUR CONVERSATION
	COMMENT		PER YOUR REQUEST
	FOR ACTION		PREPARE REPLY
	INFORMATION		RECOMMENDATION
	INITIAL		SIGNATURE
	NOTE AND FILE		URGENT

REMARKS:

At Mr. Duval's request, I am also enclosing a copy of the ESMAP Project Document.

FROM:	ROOM NO.:	EXTENSION:
Robin Bates, Actg. Chief	D-449	7-4545

Record Removal Notice

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File Title	Barcode No.
Masood Ahmed - Chronological File - April to June 1984	30450183

Document Date	Document Type
5/14/1984	Memorandum

Correspondents / Participants

To: A. Pertuzio and J. Taylor and C. Duval

From: Julian Bharier and Masood Ahmed

Subject / Title

UNDP/World Bank Energy Sector Management Assistance Program

Exception(s)

Attorney-Client Privilege

Additional Comments

The item(s) identified above has/have been removed in accordance with The World Bank Policy on Access to Information. This Policy can be found on the World Bank Access to Information website.

Withdrawn by	Date
Bertha F. Wilson	November 2022

GUIDELINES FOR THE COFINANCING OF TECHNICAL ASSISTANCE PROJECTS AND FEASIBILITY STUDIES WITH THE JOINT UNDP/WORLD BANK ENERGY SECTOR MANAGEMENT PROGRAM

The Joint UNDP/World Bank Energy Sector Management Program (ESMP) provides assistance to developing countries in implementing the policy and investment recommendations of the Energy Assessment Reports. The World Bank is the executing agent for this program. A number of multilateral and bilateral assistance agencies have expressed interest in cofinancing specific technical assistance projects, feasibility studies and pilot or demonstration projects, with the ESMP. These cofinancing arrangements will be governed by the following guidelines, which have been developed by the Bank as executing agent for the ESMP.

Selection of Cofinanciers

(i) In all discussions with potential cofinanciers, UNDP and ourselves will first seek to obtain untied cofinancing funds.

(ii) If these are not forthcoming, then if the recipient government so requests we will accept cofinancing funds on a tied basis but only after ensuring that there is adequate technical expertise available in the country(ies) of procurement for the type of project(s) envisaged.

(iii) To ensure that all potential cofinanciers have an opportunity to participate in these projects, ESMP staff will regularly circulate to all the major donors, a list and brief description of all as yet unfunded projects which have been identified as suitable for cofinancing with the ESMP. The donors will be asked to indicate their interest in any of these projects within a given period (one month). In the event of more than one donor expressing an interest in cofinancing the project, the choice of cofinancier will be made by the recipient government. The recipient government will also, of course, need to approve all cofinancing arrangements even if a single donor is interested in the project.

Project Design, Consultant Selection and Supervision

(iv) Before embarking on a cofinancing arrangement for a particular project, all major aspects of project design and implementation will be agreed with the Government concerned and the cofinancing agency. However, the Bank will retain the right to make minor modifications to project design and implementation arrangements as the work proceeds, if this is necessary.

(v) All consultants selected for work on these projects will have to be approved by the Bank as well as the recipient country and by the agency financing their work.

(vi) All terms of reference for such consultants will be approved by the Bank in consultation with the recipient Government and the cofinancing agency.

(vii) Where more than one consultant or consultant firm submits a proposal to carry out work under a cofinanced project, the final selection of consultants in the light of their proposals will be made by a committee of Bank staff (appointed by the Assistant Director, Energy Policy and Assessments and comprising at least three staff members) in consultation with the staff of the cofinancing agency and of the recipient government.

(viii) Bank staff working on the ESMP will be responsible for the technical supervision of the consultants work (regardless of how financed). The staff of the cofinancing agency may, if they wish, participate in any supervision missions. However, the final directions for the consultants' work and the review will be the responsibility of Bank staff. Where payment to consultants is contingent on satisfactory execution of specific tasks, the final determination of whether this criterion has been met will also be done by the Bank.

Fund Administration

(ix) Where we participate in a tied cofinancing arrangement, we would express a strong preference for the cofinanciers to administer their own funds — i.e., they would pay directly for the consultants and other services employed on the project and financed by them. Where the cofinancier's participation is contingent upon the Bank administering their tied contribution, we would be prepared to do so, subject to approval by the Cofinancing Advisory Unit.

(x) No specific management fee would be charged for administering cofinanciers' funds (whether tied or not). However, to help defray the Bank's administration costs, any cofinancing funds provided in advance would generally be invested in an interest bearing account until their disbursement.

Energy Sector Management Program
January 18, 1984
MAhmed:jrs

ENERGY SECTOR MANAGEMENT ASSISTANCE PROGRAM

Status Report as of April 20, 1984 and Work Program to June 30, 1984

Country/Activity		Principal Staff	Stage Completed	Apr.	May	Jun.	Comments
EAST AFRICA							
Burundi	Negotiations with Oil Companies	Postwedt	(7)	-	8	9	Part of programmed assistance may be required because of UN offer f similar work.
Burundi	Assistance for Energy Round Table	King/Peters	(7)		8	9	
Burund	Improved Charcoal Stoves	King/Floor	(6)		7		
Capco	Institutional Review	Gebhart	(6)				Committee's work extended to Jun Report will be prepared thereafte
Ethiopia	Power Efficiency Audit	Gulstone/Banks	(6)		7	8	
Ethiopia	Power Supply Options for Eresa ICS	Newcombe/Herman	(6)		7	8	
Kenya	Energy Assessment Status Report	Newcombe	(9)				
Kenya	Solar Water Heating	Newcombe	(3)				Because of ongoing CIDA project limited advisory support from ES will now be required.
Kenya	Power Sector Efficiency Audit	Newcombe/Mitchell	(9)				Report has identified $11 millio rehabilitation package.
Malawi	Institutional Review of Energy Sector	Ansari	(8)				Report circulation delayed pendi clarification of changes in inst tional arrangements. Review mis scheduled for June, 1984.
Rwanda	Energy Assessment Status Report	King	(8)	9			
Rwanda	Charcoal Production	King	(3)		4,5	6	Further ESMAP work dependent on of forestry project component.
Rwanda	Improved Charcoal Stoves in Kigali	King	(3)		4,5	6	" " " "
Seychelles	Power Efficiency Audit	Mitchell/Mian	(7)		8	9	
Sudan	Power Sector Efficiency Audit	Alahdad	(8)		9		Awaiting Government clearance of report.
Uganda	Energy Assessment Status Report	Alahdad	(5)			6	
Uganda	Institutional Review and Petroleum Import Arrangements	Alahdad/Ogmen	(5)			6	
Zambia	Energy Assessment Status Report	Armar	(5)				Mission postponed to June/July a advice of Resident Representativ
Zimbabwe	Energy Assessment Status Report	Armar	(8)		9		Awaiting Government clearance of report.

Stages of ESMAP Activities

1. Identification, definition of assistance
2. Government request received
3. Terms of reference drafted
4. Activity Initiation Report issued
5. Consultant hired, staff identified
6. Mission in field
7. Draft report issued for internal review
8. Draft Report sent for Govt. clearance
9. Report agreed with Govt. and issued in final

	Country/Activity	Principal Staff	Stage Completed	Apr.	May	Jun.	Comments
WEST AFRICA							
Gambia	Solar Water Heating	Armar/Chronowski	(6)		7	8	
Gambia	Petroleum Supply Management	Armar/Consultant	(3)		4	5,6	
Senegal	Energy Assessment Status Report	Ahmad	(5)		6	7	
LAC							
Haiti	Energy Assessment Status Report	Weimper/King	(6)	7	8	9	
Peru	Improved Stoves	Floor	(3)	4	5,6		Subject to scope of FAO work.
EAST ASIA AND PACIFIC							
Indonesia	Energy Assessment Status Report	Prasad/Mitchell	(5)		6	7	
Papua New Guinea:	Institutional Review of Energy Sector	Prasad/Alahdad	(8)		9		
Papua New Guinea:	Electricity Tariffs and Regulation for Auto Generation	Alahdad/Dwek	(8)			9	Finalization of report delayed to incorporate results of major planning study.
SOUTH ASIA							
Bangladesh	Energy Assessment Status Report	Mitchell	(9)				
Sri Lanka	Industrial Energy Conservation	Gaskin	(4)	5	6	7	
Sri Lanka	Transport Sector Conservation Plan	Gaskin	(3)	4	5,6		
Sri Lanka	Rural Industry Energy Efficiency	Floor	(3)				Timing dependent on EEC contrib

Stages of ESMAP Activities

1. Identification, definition of assistance
2. Government request received
3. Terms of reference drafted
4. Activity Initiation Report issued
5. Consultant hired, staff identified
6. Mission in field
7. Draft report issued for internal review
8. Draft Report sent for Govt. clearance
9. Report agreed with Govt. and issued in final

April 23, 1984
MAhmed:asf.

UNITED NATIONS DEVELOPMENT PROGRAMME

Interregional Project Agreement

Project Document

Title: UNDP/World Bank Energy Sector Management Programme - a Technical Assistance Programme linked to the Energy Sector Assessment Program

Duration: 2 years

Starting Date: April 1983

Number: INT/83/005/A 73/42

Sector: Energy

Government Cooperating Agencies: To be identified in each of the participating countries.

Date of Submission: April 1983

Executing Agency: The World Bank

Government Contribution: (In kind--See Section IIG)

UNDP Contribution: $1,700,000 (Energy Account)

Approved: _____ Date: _____
On behalf of Executing Agency

Approved: _____ Date: _____
On behalf of the UNDP, Division for Global and Interregional Projects

Approved: _____ Date: _____
On behalf of UNDP, Energy Account

PART I

Legal Context

1. This agreement will become effective when signed on behalf of the United Nations Development Programme and the World Bank. Cooperating arrangements with participating countries will be undertaken through exchange of letters at which time the respective Basic Agreement between Governments and the United Nations Development Programme shall take effect.

PART II

A. Development Objectives

2. The long term objective of the Energy Sector Management Programme, of which this project constitutes the initial phase, is to enable developing countries to successfully complete the transition to an era of high cost energy by strengthening their capability to plan and manage all types of energy projects within the framework of an integrated sector development strategy.

B. Immediate Objectives

3. The immediate objective of the Energy Sector Management Programme (ESMP) is to provide timely and well focussed technical assistance to participating developing countries to help them implement a broad range of recommendations made by the Energy Sector Assessment Reports in four major areas: sector management, policy formulation and institutional strengthening; energy efficiency improvements; rural and renewable energy development; and manpower and institutional development.

4. The immediate objectives of this project are: (i) to review the technical assistance requirements in countries for which assessment reports have been completed or are under prepartion and to identify how these requirements could be met from the various bilateral, multilateral and other agencies; (ii) to initiate ESMP operations in priority countries where such assistance is urgently required and has been requested by the Government; (iii) to evaluate actions which have been taken in the wake of the energy assessments and identify future work; and (iv) in light of the above, to prepare a detailed medium term work programme for the various components of the ESMP.

C. Special Considerations

5. This project builds upon and is, in effect, defined by the results of the Energy Sector Assessment Programme which is being executed by the World Bank and financed jointly by the UNDP and the World Bank under the interregional project "Assessment of the Investment and Technical Assistance Needs in the Energy Sector." (Project INT/80/009).

D. Background and Justification

6. By the end of the 1970s most developing countries found that they had to deal with new and massive problems of adjustment in the energy sector. However, decisions on the substitution of imported oil by indigenous resources or other types of imported fuels were by no means easy to make. There were great uncertainties about domestic energy resource potential, about the types of technologies which could be adopted for the production, distribution and use of different fuels, about the availability and cost of finance for energy resource development and the time required to prepare and implement appropriate projects. Moreover, in most developing countries comprehensive energy sector management was in a rudimentary state. Basic information, for example, on demand patterns and growth, was poor, little of the preinvestment work necessary for effective decision making had been carried out and there was limited analysis of policy issues and of the mechanisms for coordinating the actions of the various users and producers of different types of energy. While many countries clearly needed to improve the efficiency of energy use there was little experience or technical capability in this area.

7. As a first step in response to this situation, the World Bank and the United Nations Development Programme in November 1980 jointly launched a 60-country Energy Sector Assessment Programme designed to provide a rapid diagnosis of the major energy problems faced by the developing countries and an evaluation of the options for solving these problems. Since the Programme began, 13 assessments have been completed, a further 12 are in various stages of preparation and 12 are planned to start in the next year.

8. The response to the Assessment Programme has been strong, with the number of requests to date from Government in excess of the 60 originally envisaged. Many Governments already have begun to use these reports to clarify their sector strategy and prepare solutions to major problems. The reports are also being used increasingly by many agencies to help them in developing their own assistance programmes for these countries.

9. The successful completion of a number of Energy Assessment Reports has highlighted the urgent need for follow up assistance to ensure that priority issues identified by these reports are in fact effectively addressed. This assistance falls into two broad categories. First, specific policy or investment options identified by the energy assessment reports frequently need to be analyzed in much greater detail before a final decision can be taken. Because of their essentially diagnostic nature, this detailed feasibility work cannot be incorporated into the assessment process itself but many countries nevertheless require assistance in carrying out these tasks. The second type of assistance that is being identified as having high priority relates to the strengthening of the institutional and management framework for the energy sector, particularly at the national level. In nearly all the countries where assessment missions have been fielded,

this assistance is likely to be a vital element in ensuring that complex, more diversified and much larger energy investment programs are successfully implemented. It will also be a necessary adjunct for developing effective energy demand management programs which span several fuels and user sectors.

10. Some of this assistance can be, and is being, provided by other donor agencies active in the field; indeed, one of the objectives of the assessment reports is to act as a catalyst in mobilizing such assistance. However, in a number of important areas additional effort is required because the existing mechanisms are either inadequate or not sufficiently flexible. A reflection of this is the increasing number of requests from countries where assessments have been carried out for the UNDP/Bank assessment team to continue to provide independent and objective policy and programme advice and support in helping to implement the recommendations of completed assessment reports. A few of these requests have been accomodated to date by reallocating resources from other UNDP/World Bank activities, but a growing file of requests from other countries cannot be financed from existing resources. The proposed ESMP, which is described more fully in a joint UNDP/World Bank brochure of November 1982, 1/ has been developed in response to this demonstrated need. The massive need for investment and the related planning and pre-investment work in the energy sector form the basic justification for the program and for the partnership of the UNDP and the World Bank in executing it.

E. Output

11. The output of the project, will essentially be the tangible impact in the countries involved in improved policies, investment plans and priorities, project preparation, energy efficiency, training programmes and institutional arrangements. In addition, the governments will receive two types of reports, as appropriate:

(i) project descriptions and pre-feasibility studies, including justification and terms of reference for feasibility studies and recommendations for further project preparation, financing and other actions; and

(ii) technical/management assistance studies including evaluation and recommendations on investment programmes, policy/institutional changes, further technical assistance programmes, and training programmes, with proposals for financing and other actions.

1/ The Joint UNDP/World Bank Energy Sector Assessment Programme and Energy Sector Management Programme: A Progress Report. November 1982.

F. Activities

12. The full Energy Sector Management Programme comprises four major inter-related activities: (i) Energy Management Assistance Programme; (ii) Energy Efficiency Programme; (iii) Rural/Renewable Energy Programme; and (iv) Manpower and Institutional Development Programme:

(i) Energy Management Assistance Programme

13. This programme would enable the government to draw on Bank and/or UNDP staff resources, basically the same types of expertise as has been used in the assessment process, to help it strengthen the capability to effectively manage its energy sector and coordinate external assistance. If the government so requests, the process of helping the country could include:

(a) assisting the government in improving its capacity for sector management through technical advice and support for the country's energy planning and management organization; techical assistance for establishing and maintaining an appropriate energy data base; and definition, preparation, supervision and evaluation of selected pre-feasibility studies and project proposals.

(b) defining the specific requirements for technical assistance and pre-investment activities, including, e.g., the objectives, work plan and required inputs for both the government and external contributions in a format the government can use in discussion with official bilateral and multilateral financing agencies or with interested private investors;

(c) assisting the government in developing a medium-term investment plan and an associated portfolio of project profiles for the major projects;

(d) helping the government identify sources of finance, both public and private, for each of the follow-up activities identified during the assessment. This can include participating in meetings of aid consultative groups or UNDP Round Tables for the least developed countries, arranging special meetings or seeking financing through bilateral discussions with individual financing agencies;

(ii) Energy Efficiency Programme:

14. Improving the efficiency of energy use has substantial potential and high returns in almost all developing countries. An Energy Efficiency Programme has therefore been designed which would include:

(a) assistance to governments in the establishment of a national energy efficiency capability, including manpower

development and institutional strengthening, the development of appropriate policies and programmes for managing energy demand and the implementation of energy audits in the industrial, transport and other sectors with the objective of identifying energy-saving opportunities and providing recommendations for achieving these.

(b) assistance in preparing pre-feasibility studies of potential energy saving investments in economic subsectors where energy saving potential has already been identified. This includes a preliminary survey of the subsector to pinpoint the most promising energy conservation investment projects and the preparation of technical and economic pre-feasibility studies leading to the preparation of energy conservation investment projects for implementation by the appropriate financing sources.

(c) Power System Loss Reduction. This would identify and quantify efficiency improvement requirements in electric power systems in countries which are willing to take steps to effectively reduce power system losses. Individual system improvement projects would be identified and subsequently prepared to the point where they would be suitable for financing by the World Bank, UNDP or other multilateral and/or bilateral institutions. Preparatory work for this component has already been financed from the UNDP Energy Account in 1982.

(iii) Rural/Renewable Energy Programme:

15. The energy assessment missions have emphasized the need for help in strengthening institutions, policies and practical programmes for new and renewable energy resources, particularly in the rural sector. In addition, a variety of pilot projects has been identified and these need to be evaluated and implemented before major investments can be made in renewable energy supply and conservation. These projects are relatively small-scale but heavy staff inputs are required for their preparation and supervision. While many donor agencies have expressed interest in providing funds for the projects themselves a mechanism is needed by which expert preparation and supervision resources can be provided to assess the performance of pilot projects and identify their investment potential, as well as to develop the necessary skills in the country to continue with this work. The proposed Rural/Renewable Energy Programme is designed to meet this need. It will cover activities flowing from the Assessment Programme and provide a focus for rural/renewable energy activities as well as a means of ensuring that experience gained in pilot projects is disseminated to all concerned countries. The criteria for involvement in specific pilot projects will be the Government's commitment to an appropriate institutional framework and to the potential follow-up investment as part of a national programme.

(iv) Manpower and Institutional Development Programme

16. The Assessment Programme and other work done by various UN agencies and the World Bank have identified a critical need for supporting manpower and institutional development in the energy sector. The other components of the Energy Sector Management Programme will address these problems in their relevant areas (sector management, energy efficiency, rural/renewable energy), and this integrated approach will be the most effective way to address certain specific training and institutional development needs. However, there are some types of needs that will not be fully covered in this way, and a supplemental manpower/institutional programme is therefore required.

17. This activity may include the following:

- diagnoses of organizational/managerial/manpower problems in key sector institutions with recommendations and preparation of terms of reference for further action;
- in-country training programmes to meet specific specialist needs (energy planning, energy economics, finance, technical specialities);
- workshops and seminars involving technical experts from various developing countries to exchange ideas and experience;
- short-term external training courses in various specialities (technical, economic, etc.);
- secondment of key individuals to foreign energy sector institutions and financing agencies;

18. As shown in the following table the full scale operation of the Energy Sector Management Programme would entail a total resource allocation of $6 million in 1983 rising to $11 million by 1986 (all in 1982$).

ENERGY SECTOR MANAGEMENT PROGRAMME
ESTIMATED FINANCIAL REQUIREMENTS
1983-86
($ million in 1982 prices)

	1983	1984	1985	1985	TOTAL
Energy Management Assistance Programme	1.50	1.50	2.00	2.00	7.0
Energy Efficiency Programme	3.00	5.00	5.50	5.50	19.00
(industry, transport and major energy-using sectors)	(2.00)	(3.50)	(3.50)	(3.50)	(12.50)
(Power Loss-Reduction Project)	(1.00)	(1.50)	(2.00)	(2.00)	(6.50)
Rural/Renewable Energy Programme	1.00	1.50	2.50	3.00	8.00
Manpower and Institutional Development Programme	0.50	0.50	0.50	0.50	2.00
TOTAL	6.00	8.50	10.50	11.00	36.00

18. As the full extent of these resources has yet to be mobilized, UNDP and the World Bank propose to adopt a phased approach in developing the programme. This project document which covers the initial phase of the Program, would enable the operation to begin on a limited scale. It would allow the executing agency to recruit a core team of energy planners, economists or technical specialists for a two-year period and to respond to priority requests for assistance in some of the countries where assessments have been carried out or are under preparation (see Annex 1 attached). Detailed work programmes in each of these countries are being worked out in consultation with the governments and the UNDP resident representatives. These programs will take into account the recommendations of the assessment reports, the requests from Governments and the availability of potential financing sources. This project would also enable the preparation of a detailed work programme for the full scale operation of the Energy Sector Management Programme which would be used as a basis for discussion with potential donors who could contribute additional resources for financing these operations.

19. Although there are four broad "components" to the programme, it is an integrated programme to be managed as such, in the same manner as the Energy Sector Assessment Programme. This is essential to ensure that the program responds to priority needs in a flexible way, that progress is effectively monitored and that the quality of output is maintained.

G. Inputs

20. (a) Government Inputs: Each participating Government would be expected to provide appropriate counterpart staff for the consultants funded under the project and to carry out the preparatory work required (such as data collection and analysis, surveys, institutional studies, etc.). The Government would normally also provide office space, supplies, secretarial services and local transport for the effective operation of the project.

(b) UNDP Inputs: These would include:

- Three full time energy experts for a period of 24 months each. These would comprise an energy economist/planner, a technical specialist and a program/management officer. This last position will be recruited by UNDP and will be based initially at UNDP Headquarters.

- Fifty months of short-term consultants.

- A budget to cover travel and per diem costs for both the full-time experts and short-term consultants

- A budget to cover secretarial, administration and other direct costs associated with setting up the program.

- Details of these inputs are set out in the attached budget.

(c) Donor Agency Input: These will be incorporated in the total Energy Sector Management Program as they become available, and the budget document attached as Annex 2 will be revised accordingly.

Sections H through M

(Not Applicable.)

PART III

21. A. Schedule of Reviews

The project will be subject to periodic reviews by UNDP and the World Bank, in accordance with the UNDP's established policies and procedures.

B. Evaluation

The project will be subject to evaluation in accordance with UNDP's established policies and procedures.

C. Progress and Terminal Reports

The Bank will submit to UNDP semi-annual progress reports and a terminal report upon completion of the project, as well as reports of all country specific activities funded under the project as they become available.

ANNEX I

The Joint UNDP/World Bank Energy Assessment Programme

Assessments Completed Since Nov. 1980	Assessments in Progress
Bangladesh	Benin
Burundi	Bolivia
Haiti	Ethiopia
Indonesia	Fiji
Kenya	Morocco
Malawi	Nepal
Mauritius	Niger
Papua New Guinea	Nigeria
Rwanda	Peru
Sri Lanka	Senegal
Turkey	Solomons
Zambia	Sudan
Zimbabwe	Togo
	Uganda
	Yemen A.R.

4/1/83

PROJECT BUDGET COVERING THE UNDP CONTRIBUTION (IN U.S. DOLLARS)

Country : INTERREGIONAL
Number : INT/83/005
Title : Energy Sector Management Program

				CY83		CY84		CY85	
			SM	TOTAL	SM	TOTAL	SM	TOTAL	SM	TOTAL
10.0		Personnel								
	11.1	Energy Expert	24	208,000	6	40,000	12	108,000	6	60,000
	11.2	Energy Expert	24	208,000	6	40,000	12	108,000	6	60,000
	11.3	Program Management a/	24	208,000	6	40,000	12	108,000	6	60,000
	11.4	Consultants	50	526,000	15	157,800	20	210,400	15	157,800
	11.99	Sub-total	122	1,150,000	33	277,800	56	534,400	33	337,800
13.0		Administration								
	13.1	Adm. Officer b/		70,000		15,000		35,000		20,000
	13.2	Researcher		60,000		15,000		30,000		15,000
	13.3	Researcher		60,000		15,000		30,000		15,000
	13.4	Secretary		39,000		9,000		20,000		10,000
	13.5	Secretary		39,000		9,000		20,000		10,000
	13.6	Secretary a/		39,000		9,000		20,000		10,000
15.0		Travel		160,000		65,000		80,000		15,000
	15.99	Sub-total		467,000		137,000		235,000		95,000
16.0		Mission Costs		42,000		10,000		20,000		12,000
50.0		Miscellany								
	52.0	Reports		21,000		8,000		10,000		3,000
	53.0	Sundry		20,000		8,000		10,000		2,000
	50.99	Sub-total		83,000		26,000		40,000		17,000
	99	Project Total		1,700,000		440,800		809,400		449,800

a/ These posts will be recruited by UNDP and will be based initially at UNDP Headquarters in New York.

b/ 50% of estimated costs; remainder will be provided under the ongoing Energy Assessment Program.

5/14
Mr Durais acey says memo is ok with him.
K
5/14

FORM NO. 75
(6–83)

THE WORLD BANK/IFC

ROUTING SLIP	DATE: May 8, 1984

NAME	ROOM NO.
Mr. John Taylor	E-707

	APPROPRIATE DISPOSITION		NOTE AND RETURN
	APPROVAL		NOTE AND SEND ON
X	CLEARANCE		PER OUR CONVERSATION
	COMMENT		PER YOUR REQUEST
	FOR ACTION		PREPARE REPLY
	INFORMATION		RECOMMENDATION
	INITIAL		SIGNATURE
	NOTE AND FILE		URGENT

REMARKS:

FROM:	ROOM NO.:	EXTENSION:
Robin Bates, Actg. Chief	D-449	7-3538

Record Removal Notice

The World Bank Group Archives & Records Management

File Title	Barcode No.
Masood Ahmed - Chronological File - April to June 1984	30450183

Document Date	Document Type
5/8/1984	Memorandum

Correspondents / Participants

To: A. Pertuzio and J. Taylor and C. Duval

From: Julian Bharier and Masood Ahmed

Subject / Title

UNDP/World Bank Energy Sector Management Assistance Program

Exception(s)

Attorney-Client Privilege

Additional Comments

The item(s) identified above has/have been removed in accordance with The World Bank Policy on Access to Information. This Policy can be found on the World Bank Access to Information website.

Withdrawn by	Date
Bertha F. Wilson	November 2022

THE WORLD BANK/INTERNATIONAL FINANCE CORPORATION

OFFICE MEMORANDUM

To: Mr. Stephen Weissman, EISVP May 3, 1984

From: Masood Ahmed, Deputy Chief, EGYEA

Subject: Task Force on EIS Information System

1. As both Julian Bharier and I will be away on May 11 when the next meeting of the Task Force is scheduled I thought it would be useful to let you have our preliminary views on the immediate focus of the task force, i.e., the definition of the information on sector work and other output that should be sent to Mr. Dherse on a regular basis. In this regard I have followed the basic principle that until a mechanized and integrated MIS system is established in EIS, to the extent possible the information sent to Mr. Dherse should be extracted from existing reports produced by the various units. This will result in some variety of format and presentation but any attempt to standardize this information should best be undertaken in the context of the proposed MIS exercise whose timing is still not fully certain.

2. In the Energy Department, this information would be extracted from three reports which are:

(a) The Quarterly Status Report on the Assessments Program - this provides information on the current status of all ongoing assessments by region (sample attached).

(b) The Quarterly Status Report on the Energy Sector Management Assistance Program - this provides information on completed ongoing and planned ESMAP activities. It also lists ESMAP activities for which we are seeking cofinancing support from donors (sample attached).

(c) The Quarterly Report on "Other Output" - studies, policy work, guidelines, etc. - which follows the standard format of the OPS reports.

These reports should provide a comprehensive but summary picture of the Department's non-operational work for Mr. Dherse's review.

3. In addition, as you know each task has various reports associated with its processing. In the case of assessments this includes pre- and post-mission issues papers and various other drafts. In the ESMAP there are Activity Initiation Reports and draft and final Activity Completion Reports. In other output there are Work Initiation Briefs and draft reports. In my view, this information should be sent to Mr. Dherse on a selective basis given the volume of reports involved. In the ESMAP and Assessment Programs alone the total number of documents would exceed 200 per year. Consequently, I think the best system would be for you to let us know which items on the quarterly program status reports Mr. Dherse is particularly interested in and would like additional information on. In any event, we would routinely send to his office

copies of reports, and if you think useful, all drafts that are sent to the Government in Green Cover. We would also send you and/or Carl Ludvik a copy of all other drafts/issues papers, etc. that are sent out of the Department. You could then bring to his notice any items that were of particular interest.

4. As I indicated these are some preliminary ideas and I would be happy to discuss them with you and the other task force members upon my return.

Attachments.

cc: Messrs. Ludvik (EISVP); Kohli (IND);
Rovani, Rao, Heron, Bates, Daffern, Russo (EGY);

cc & cleared with Mr. Bharier (EGYEA)

MAhmed:aaf.

ENERGY ASSESSMENTS

STATUS REPORT AND WORK PROGRAM

March 1, 1984

WORLD BANK / INTERNATIONAL FINANCE CORPORATION

OFFICE MEMORANDUM

TO: Distribution

DATE: March 1, 1984

FROM: Robin Bates, Deputy Division Chief, EGYEA

SUBJECT: Status Report on Energy Assessments

I am attaching the latest status report as of March 1 on the Joint World Bank/UNDP Energy Assessment Program for your information. Changes have been made to reflect our understanding of the latest agreements reached with the Regions in the CESW Indicative Statements.

Distribution

Messrs. Dherse (VPEIS); Waide (CPD); Nowicki (ASP);
Bronfman, Wackman (EAP); Jennings, Linder, Moscote,
Debbagh (LCP); Finzi, Reekie (EMP);
Turnham, Golan, Beach (AEP);
Thiam, Bouhaouala (WAP); Geli, Brandreth (ASP);
Kohli, Segura, Rowat, Dewey (IND);
R. Richardson (IFC); Spears (AGR); Bennathan (TWD);
Pollan (IFC, London);
All Program Division Chiefs;
EGY Senior Staff;
EGYEA Staff;
Mesdames Haug (IND); Leach (WAP)

RBates:jrs

JOINT UNDP/WORLD BANK ENERGY SECTOR ASSESSMENTS

Blue Covers Completed	Main Mission Completed	Reconnaissance Mission Completed	Reconnaissance in next three months
Bangladesh	Benin	Jamaica	Burma
Bolivia	Botswana		Mali
Burundi	Cape Verde		Madagascar
Costa Rica	Ethiopia		Thailand
Fiji	Guinea-Bissau		*Tonga
Gambia	Ivory Coast		Upper Volta
Haiti	Liberia		*Vanuatu
Indonesia	Mauritania		*Western Samoa
Kenya	Morocco		
Lesotho	Niger		
Malawi	Paraguay		
Mauritius	Portugal		
Nepal	St. Lucia		
Nigeria	St. Vincent		
Papua New Guinea	Tanzania		
Peru	Togo		
Rwanda	Yemen AR		
Senegal			
Seychelles			
Solomon Islands			
Sri Lanka			
Sudan			
Turkey			
Uganda			
Zambia			
Zimbabwe			
Total 26	17	1	8
Cumulative (26)	(43)	(44)	(52)

* Will be main missions only.

March 1, 1984

ENERGY ASSESSMENTS
STATUS REPORT AND WORK PROGRAM FOR EAST AFRICA

COUNTRY	PRINCIPAL STAFF INVOLVED			STAGE COMPLETED	FY84				FY85								COMMENTS OR MAJOR CHANGES SINCE LAST REPORT
	EGYEA	PROJECTS	PROGRAMS		MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	
BOTSWANA	*Armar Mian	Dyson	Morris	(6)	7,8	9	10										
COMOROS	*Schmedtje			(0)							1,2	3	4	5		6	
ETHIOPIA	*Wackman Newcombe Boroumand	Killoran Besant-Jones	Codippily	(9)			10										
MADAGASCAR	*Schmedtje Russell (Cons)	Grut	Stephenson McGibbon	(0)	1	2	3		4	5		6	7	8	9	10	
MOZAMBIQUE	*Liebenthal			(0)											1	2	Mission subject to confirmation of Government interest.
SOMALIA	*Richter	Fostvedt	Sharma	(1)					2	3	4	5		6	7	8	
SWAZILAND	*Schmedtje			(0)							1,2	3	4	5		6	Special funds received under small country program.
TANZANIA	*Bates Kiwana	Poncia Schramm	Anderson	(6)	7,8	9	10										
ZAIRE	*Ferroukhi			(0)									1	2	3	4	Mission timing subject to discussions with Region and Government commitment.

COUNTRY	COMPLETED ASSESSMENTS
BURUNDI	Blue Cover 6/82.
KENYA	Blue Cover 5/82.
LESOTHO	Blue Cover 2/84.
MALAWI	Blue Cover 8/82.
MAURITIUS	Blue Cover 12/81.
RWANDA	Blue Cover 8/82.
SEYCHELLES	Blue Cover 2/84.
SUDAN	Blue Cover 7/83.
UGANDA	Blue Cover 7/83.
ZAMBIA	Blue Cover 1/83.
ZIMBABWE	Blue Cover 6/82.

OTHER COUNTRIES	
DJIBOUTI	To be carried out in FY85 but staffing and timing to be determined in conjunction with another operation to minimize cost.

* Mission Leader

Assessment Report Stages

1. Desk Study
2. Reconnaissance
3. Pre Mission Issues Paper
4. Mission
5. Post Mission Issues Paper
6. White Cover
7. Yellow Cover
8. Green Cover
9. Discussion with Government
10. Blue or Grey Cover

March 1, 1984

ENERGY ASSESSMENTS
STATUS REPORT AND WORK PROGRAM FOR WEST AFRICA

COUNTRY	PRINCIPAL STAFF INVOLVED			STAGE COMPLETED	FY84				FY85								COMMENTS OR MAJOR CHANGES SINCE LAST REPORT
	EGYEA	PROJECTS	PROGRAMS		MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	
BENIN	*Weimper	Wilton Fishwick Ohbi	Kuoh	(5)	6,7	8	9	10									
CAPE VERDE	*Liebenthal	Wilton Freeman	Gil	(5)	6	7	8	9	10								Small country program.
CONGO	*Ferroukhi			(0)				1		2	3	4	5		6	7	
GUINEA	*Craig	Thiam	Cadario	(0)								1	2	3	4	5	Mission timed for completion of Power Master Plan and to coordinate with Regional Power Sector Note.
GUINEA-BISSAU	*Liebenthal	Wilton Fishwick	Gil	(5)	6,7		8	9	10								Small country program.
IVORY COAST	*Ferroukhi Perine	Khelil	Mendoza	(4)	5		6	7	8		9	10					
LIBERIA	*Newcombe Ansari	Mena	Kendall	(4)	5		6	7	8		9	10					
MALI	*Weimper Craig			(0)	1	2	3		4	5		6	7	8	9	10	
MAURITANIA	*Richter	Gorse Ouahes	Larrecq	(5)		6	7	8		9	10						
NIGER	*Schmedtje King	Gorse Rochet	Gervais	(9)	10												
TOGO	*Weimper	Wilton Hansen Wijetilleke	Triche	(5)	6,7	8	9	10									
UPPER VOLTA	*Weimper Craig			(0)	1	2	3		4	5		6	7	8	9	10	

COUNTRY	COMPLETED ASSESSMENTS
GHANA	Green Cover 3/81.
SENEGAL	Blue Cover 7/83.
NIGER	Blue Cover 2/84.
NIGERIA	Blue Cover 8/83.
GAMBIA	Blue Cover 11/83.

OTHER COUNTRIES	
CAMEROON	Government request received; introductory report available; candidate for FY86 if Govt. commitment confirmed. Petroleum subsector work being done by consultants.
CENTRAL AFRICAN REPUBLIC	Government request received. Unscheduled.
GHANA	Reconnaissance scheduled for late FY85.
SAO TOME & PRINCIPE	Candidate for FY85 if resources available.
SIERRA LEONE	Reconnaissance scheduled for late FY85.

* Mission Leader

Assessment Report Stages

1. Desk Study
2. Reconnaissance
3. Pre Mission Issues Paper
4. Mission
5. Post Mission Issues Paper
6. White Cover
7. Yellow Cover
8. Green Cover
9. Discussion with Government
10. Blue or Grey Cover

March 1, 1984

ENERGY ASSESSMENTS
STATUS REPORT AND WORK PROGRAM FOR EMENA

COUNTRY	PRINCIPAL STAFF INVOLVED			STAGE COMPLETED	FY84				FY85								COMMENTS OR MAJOR CHANGES SINCE LAST REPORT
	EGYEA	PROJECTS	PROGRAMS		MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	
MOROCCO	*Hughart		Rees	(9)	10												
PORTUGAL	*Schmedtje Mitchell	Johnson Yucel	Lazar	(9)	10												
Y.A.R.	*Jechoutek Kraske	Vedavalli	Khenissi	(8)		9	10										

COUNTRY	COMPLETED ASSESSMENTS
JORDAN	Grey cover sector report completed by Region 11/82.
TURKEY	Blue Cover 2/83.

OTHER COUNTRIES	
TUNISIA	Reconnaissance expected in late FY85 with main work in FY86.

* Mission Leader

Assessment Report Stages

1. Desk Study
2. Reconnaissance
3. Pre Mission Issues Paper
4. Mission
5. Post Mission Issues Paper
6. White Cover
7. Yellow Cover
8. Green Cover
9. Discussion with Government
10. Blue or Grey Cover

March 1, 1984

ENERGY ASSESSMENTS
STATUS REPORT AND WORK PROGRAM FOR LAC

COUNTRY	PRINCIPAL STAFF INVOLVED			STAGE COMPLETED	FY84				FY85								COMMENTS OR MAJOR CHANGES SINCE LAST REPORT
	EGYEA	PROJECTS	PROGRAMS		MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	
ARGENTINA	*Mian Sanchez-Sierra		Nissenbaum	(0)						1		2	3	4	5		Government commitment to be confirmed.
ECUADOR	*Liebenthal Bachrach	Barbu Dobisch	Belli	(0)						1		2	3	4	5		Government request received.
DOMINICAN REPUBLIC	*Zinman	Poncia	Scheffold	(0)				1	2	3	4	5		6	7	8	
JAMAICA	*Mian Gaskin		Bernard	(3)		4	5		6	7	8	9	10				
PARAGUAY	*Zinman Sanchez-Sierra Bachrach	Bertelsmeier	Zea	(5)	6	7	8		9	10							
EASTERN CARIBBEAN (Stage I) St. Lucia, St. Vincent	*Mian	Larrieu	Kanchuger	(6)	7	8	9	10									
EASTERN CARIBBEAN (Stage II) Grenada St. Kitts	*Bates	Larrieu	Kanchuger	(0)				1			2	3	4	5		6	Government requests received. Final decision on mission leader to be made later.
EASTERN CARIBBEAN (Stage III) Dominica Antigua Montserrat	*Bates	Larrieu	Kanchuger	(0)				1					2	3	4	5	Government requests received. Final decision on mission leader to be made later.

COUNTRY	COMPLETED ASSESSMENTS
BRAZIL	Grey Cover 12/82.
BOLIVIA	Blue Cover 4/83.
CARIBBEAN	Grey Cover 5/79.
COSTA RICA	Blue Cover 2/84.
HAITI	Blue Cover 6/82.
PANAMA	Grey Cover 8/80.
PERU	Blue Cover 2/84.

OTHER COUNTRIES	
COLOMBIA	Candidate for late FY85 or for FY86.
MEXICO	Candidate for reconnaissance in late FY85 if resources available and Government request received. Desk Study already prepared.
URUGUAY	Government request received; candidate for FY86.
REGIONAL ISSUES IN CARIBBEAN REPORT	Expected November 1984.

* Mission Leader

Assessment Report Stages

1. Desk Study
2. Reconnaissance
3. Pre Mission Issues Paper
4. Mission
5. Post Mission Issues Paper
6. White Cover
7. Yellow Cover
8. Green Cover
9. Discussion with Government
10. Blue or Grey Cover

March 1, 1984

ENERGY ASSESSMENTS
STATUS REPORT AND WORK PROGRAM FOR EAST ASIA

COUNTRY	PRINCIPAL STAFF INVOLVED			STAGE COMPLETED	FYA4				FYA5								COMMENTS OR MAJOR CHANGES SINCE LAST REPORT
	EGYEA	PROJECTS	PROGRAMS		MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	
THAILAND	*Sadove Boroumand Tillman	Deffern	Davar Kumar	(1)	2	3					4		5		6	7	Mission for work on rural energy subsector already in field.
SOUTH PACIFIC Tonga Vanuatu Western Samoa	*Prasad (Cons.) Kiwana		Berlin	(3)		4	5	6	7	8	9	10					Additional UNDP resources received.

COUNTRY	COMPLETED ASSESSMENTS
INDONESIA	Blue Cover 11/81.
PAPUA NEW GUINEA	Blue Cover 7/82.
PHILIPPINES	Grey Cover 2/82.
FIJI	Blue Cover 6/83.
SOLOMON IS.	Blue Cover 6/83

OTHER COUNTRIES	
CHINA	First stage of sector work completed as part of first Economic Report. Background sector work being conducted for second Economic Report (Taylor).

* Mission Leader

Assessment Report Stages

1. Desk Study
2. Reconnaissance
3. Pre Mission Issues Paper
4. Mission
5. Post Mission Issues Paper
6. White Cover
7. Yellow Cover
8. Green Cover
9. Discussion with Government
10. Blue or Grey Cover

March 1, 1984

ENERGY ASSESSMENTS
STATUS REPORT AND WORK PROGRAM FOR SOUTH ASIA

COUNTRY	PRINCIPAL STAFF INVOLVED			STAGE COMPLETED	FY84				FY85								COMMENTS OR MAJOR CHANGES SINCE LAST REPORT
	EGYEA	PROJECTS	PROGRAMS		MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	
BURMA	*Decaux (Cons.) Luthra (Cons.) Taylor		Tsantis	(1)		2	3	4	5		6	7	8	9	10		Government interest confirmed.

COUNTRY	COMPLETED ASSESSMENTS
BANGLADESH	Blue Cover 10/82.
PAKISTAN	Grey Cover 6/80.
SRI LANKA	Blue Cover 5/82.
NEPAL	Blue Cover 8/83.

OTHER COUNTRIES	
PAKISTAN	Candidate for FY86 or FY85 if resources become available.
INDIA	Energy work focusses on conservation.

* Mission Leader

Assessment Report Stages

1. Desk Study
2. Reconnaissance
3. Pre Mission Issues Paper
4. Mission
5. Post Mission Issues Paper
6. White Cover
7. Yellow Cover
8. Green Cover
9. Discussion with Government
10. Blue or Grey Cover

March 1, 1984

THE WORLD BANK/INTERNATIONAL FINANCE CORPORATION

OFFICE MEMORANDUM

To: Distribution Date: March 1, 1984

From: Julian Bharier, Chief, EGYEA

Subject: ESMAP: Quarterly Status Report

1. I am attaching, for your information and comments, a copy of the latest status report on the Energy Sector Management Assistance Program (ESMAP). The report is divided into five setions:

I. Listing and brief description of activities completed to date under this Program, as well as information on the current status of implementation of these activities;

II. Listing and status of all ongoing activities as well as activities planned to start in the next three months;

III. Brief description of each activity listed in Part II;

IV. Summary listing of completed, ongoing and planned activities (for external dissemination);

V. Brief description of potential ESMAP activities for which cofinancing support is being sought. (This part has been added to reflect the growing importance of cofinancing in ESMAP operations and can also be distributed outside the Bank. Detailed profiles for the projects listed in this section can be provided upon request).

2. You may be interested to know that during the last three months ESMAP has continued to gain momentum: four activities have been completed and work has started or is about to begin on an additional eight. There have also been a number of Program level developments, many of which are summarized in the February 1984 Annual Progress Report on the UNDP/World Bank Energy Sector Programs which you have already received. Two points that I would like to bring to your attention in particular are first, the progress made in defining the ESMAP Product Line and, second, the development of procedures which would enable interested donor agencies to participate in the program by cofinancing specific large ESMAP activities.

3. Regarding the first, we have grouped the various activities carried out under the Program into the following three broad categories:

- Energy Assessment Status Reports: these evaluate achievements in the year following issuance of the original assessment report and point out where urgent action is still needed;

- Project Formulation and Justification: work designed to accelerate the preparation and implementation of investment projects; and

- Institutional and Policy Support: this work also frequently leads to the identification of technical assistance packages.

We have found this classification system to be helpful in explaining the objectives and scope of ESMAP to both recipient and donor countries.

4. Regarding cofinancing, as you know a number of donors have expressed interest in financing specific ESMAP activities which could be managed by our staff. At the same time our own work has identified a number of priority feasibility studies and pilot projects which would benefit from ESMAP involvement but which cannot be undertaken from ESMAP resources alone, given our current funding. Therefore, we have developed a set of guidelines which would enable interested donors to "cofinance" certain ESMAP operation chosen by us while still ensuring the quality of the work and the overall management responsibility of our staff. These guidelines have been approved by the Bank's senior management and the UNDP. 1/ In accordance with these guidelines, the EEC have already agreed to contribute $100,000 towards the cost of the proposed rural industry efficiency study in Sri Lanka; EEC is also likely to contribute substantial funds for potential ESMAP managed projects in Niger and Ethiopia. Discussions on specific cofinancing operations are also underway with the Dutch, German and Canadian governments.

5. Please send your comments to Masood Ahmed (ext. 7-4545) or to myself (ext. 7-2781).

Attachment.

Distribution:

Messrs. Dherse, Ludwik, Weissman (VPEIS);
Bronfman, Wackman (EAP); Bouhaouala, Thiam (WAP);
Turnham, Beach (AEP); Geli, Brandreth (ASP);
Finzi, Reekie (EMP); Jennings, Moscote, Linder (LCP);
Raphaeli, Lethem (PPD); Riley, Burney (IRD);
Dewey, Kohli, Gamba, Segura, Rowat, Dervis, Stern (IND);
de Azcarate (CPD); Spears (AGR); Bennathan (TRP);
Rovani, Rao, Sheehan, Sadove, Bourcier, Fish, Dosik, Heron,
Saunders, McCarthy, Iskander, Kalim.
Mashler, Harland, Cox (3) (UNDP, New York)
Ms. Haug (IND)

cc: EGYEA Staff

1/ Copies are available upon request.

MAhmed:aaf.

ENERGY SECTOR MANAGEMENT ASSISTANCE PROGRAM

Status of Completed Activities

	Date of Activity Completion Report
Bangladesh: Priority Investment Program for Energy: On the basis of several visits to Bangladesh, a consultant (Ansari) has identified high priority energy investments, particularly in the power and natural gas subsectors. An Activity Completion Report for this task was issued in May, 1983. However, at the request of the Government and Programs staff, the report is not being distributed outside the Bank.	May, 1983
Sudan: Management Assistance to the Ministry of Energy and Mining: At the request of the Minister of Petroleum, endorsed by the Assessment Mission, a consultant (Ansari) visited Sudan from February 22-April 1, 1983 to help establish a data reporting and monitoring system which would enable the senior policy-makers in the Ministry to take prompt and informed decisions on key sector issues. This work has also identified the need for a clearer definition of the functions of different departments in the Ministry. The results of this work were incorporated in the Energy Assessment Report. An Activity Completion Report was issued in May, 1983.	May, 1983
Panama: Power System Loss Reduction Study: In their mission of January, 1983, Sear at al identified possible reductions of power distribution losses. Some of these measures were incorporated in the Bank's second power distribution loan. An Activity Completion Report was issued in June, 1983.	June, 1983
Zimbabwe: Power System Loss Reduction Study: A mission (Sear et al) visited Zimbabwe in November 1982 to evaluate the potential for reducing losses in the electric power distribution network. The mission identified substantial savings that could be realized in the short and medium term. An Activity Completion Report was circulated in June, 1983. Progress in the implementation of these	June, 1983

recommendations will be ascertained during a forthcoming mission.

Papua New Guinea: Energy Assessment Status Report: A mission (Ahmed/Prasad) visited Papua New Guinea in early June, 1983 to prepare this report which was cleared by the Government in the field and subsequently issued in final form in July, 1983. — July, 1983

Sri Lanka: Power Sytem Loss Reduction Study: A mission (Sear et al) visited Sri Lanka in March-April, 1983 to evaluate the potential for reducing power distribution losses. Significant potential savings have been identified both in distribution and through improving the efficiency of generating plant. The Government has begun to implement the recommendations of the report by setting up a T&D loss reduction program with Bank assistance. The rehabilitation of the Kelanitissa steam plant is expected to take place in 1985 when the plant can be withdrawn from service. Funding for this activity is being sought. — July, 1983

Mauritius: Energy Assessment Status Report: This report was prepared in conjunction with a September, 1983 supervision mission for the ongoing Energy Planning Technical Assistance Project. Having been cleared by the Government in the field, the report was issued in final in October. The report outlines the considerble progress that has been made in developing Mauritius' bagasse potential but it also identifies the need for further Government action and external assistance in the area of demand management and institutional coordination. — October, 1983

Malawi: Technical Assistance Package to Improve the Efficiency of Fuelwood Use in the Tobacco Industry: The objective of this task was to evaluate the various technical options for improving the efficiency of wood use in the tobacco industry and to define a program to begin achieving these improvements. The work was carried out by a June, 1983 mission comprising Messrs. Wagner (EA1), Lambert, Stocks (consultants). The mission's report has been circulated in final and has identified a $350,000 pilot program to begin achieving these savings. This pilot program is financed under the Bank's second technical assistance credit for Malawi. Preliminary activities for the project, which starts on April 1, 1984, are underway. A supervision mission is planned for June 1984. — November, 1983

Sri Lanka: Energy Assessment Status Report: This report which was prepared by a December, 1983 mission (Ahmed/Kraske), reviewed the significant progress made in the energy sector since the May, 1982 issuance of the Energy Assessment Report. The report also identified a number of areas where further technical assistance was required. Some of this assistance (in the area of energy efficiency improvements) is to be provided through the ESMAP.	January, 1984
Malawi: Energy Assessment Status Report: This report was prepared by an August, 1983 mission (Ansari). The report has identified the priority technical assistance requirements, most of which are being picked up through an IDA assisted TA project.	January, 1984
Burundi: Energy Assessment Status Report: A staff mission (King) visited Burundi in September, 1983 to evaluate developments in the energy sector since the June, 1982 issuance of the Energy Assessment Report, and to identify the need for further technical assistance in implementing the Assessment recommendations. The final report, issued in February, 1984, was circulated by the Government at the UNDP sponsored Donors Round Table Meeting in Bujumbura held in the same month.	February, 1984
Burundi: Petroleum Supply Management: A September, 1983 mission (Rocheron/King) reviewed existing and alternative arrangments for the import and distribution of petroleum products. The Activity Completion Report sets out a number of recommendations on diversifying supply routes and strengthening the Government's capacity to formulate and implement a cost effective petroleum supply strategy. It also includes a proposal for technical assistance over a one year period to help the Government develop this capability. The report was circulated by the Government at the February, 1984 UNDP sponsored Donors Round Table Meeting in Bujumbura at which the OPEC Fund expressed a strong interest in financing the technical assistance package identified in the report.	February, 1984

March 1, 1984

ENERGY SECTOR MANAGEMENT ASSISTANCE PROGRAM

Status Report as of March 1, 1984 and Work Program to May 31, 1984

Country/Activity		Principal Staff	Stage Completed	Mar.	Apr.	May.	Comments
Bangladesh	Energy Assessment Status Report	Mitchell	(8)	9			Report may be circulated to Aid Group for information.
Burundi	Negotiations with Oil Companies	Pantvedt.	(6)	7	8	9	Part of programmed assistance may not be required because of UN offer for similar work.
Burundi	Assistance for Energy Round Table	King/Peters	(6)	7	8	9	
Capeo	Institutional Review	Gelbart	(6)				Committee's work scheduled to finish in April. Report will be prepared thereafter.
Ethiopia	Power Efficiency Audit	Gulstone/Banks	(3)	4,5	6		
Gambia	Solar Water Heating	Arnar/Chronowski	(4)	5	6		
Gambia	Petroleum Supply Management	Arnar/Consultant	(2)	3	4	5	
Haiti	Energy Assessment Status Report	Weimper/King	(6)	7	8	9	
Indonesia	Energy Assessment Status Report	Prasad/Mitchell	(5)		6		Mission timing subject to confirmation by RSI and Government.
Kenya	Energy Assessment Status Report	Newcombe	(8)	9			Awaiting Government clearance of draft report.
Kenya	Solar Water Heating	Newcombe	(3)				Because of ongoing CIDA project only limited advisory support from ESMP will now be required.
Kenya	Power Sector Efficiency Audit	Newcombe/Mitchell	(8)	9			Report has identified $11 million rehabilitation package.
Malawi	Institutional Review of Energy Sector	Ansari	(8)				Report circulation delayed pending clarification of changes in institutional arrangements. Review mission scheduled for June, 1984.
Niger	Assistance for Energy Round Table	Ahmed	(1)				Round Table has been postponed indefinitely. Activity will be dropped from future status reports.
Papua New Guinea:	Institutional Review of Energy Sector	Prasad/Alahdad	(8)		9		Government comments on draft report expected by early March.
Papua New Guinea:	Electricity Tariffs and Regulation for Auto Generation	Alahdad/Dunk	(8)			9	
Peru	Improved Stoves	Floor	(3)	4	5,6		Subject to scope of FAO work.
Rwanda	Energy Assessment Status Report	King	(8)	9			Report has been discussed and cleared by Government and has identified a number of priority areas for follow up.
Senegal	Energy Assessment Status Report	Ahmed	(5)		6	7	
Seychelles	Power Efficiency Audit	Mitchell/Miss	(5)	6		7	
Sri Lanka	Industrial Energy Conservation	Gaskin	(4)	5	6	7	
Sri Lanka	Rural Industry Energy Efficiency	Floor	(3)	4	5	6	Cofinanced with EEC
Sudan	Power Sector Efficiency Audit	Alahdad	(8)		9		Mission scheduled for March to discuss report with Government.
Uganda	Petroleum Import Arrangements	Alahdad/Ogmen	(7)	8			March mission will discuss report with Government.
Uganda	Energy Sector Assistance	Alahdad	(3)				March mission will define scope of ESMAP assistance.
Zambia	Energy Assessment Status Report	Arnar	(5)				Mission postponed to June/July on advice of Resident Representative.
Zimbabwe	Energy Assessment Status Report	Arnar	(8)		9		Mission scheduled for March to discuss report and follow up with Government.

Stages of ESMAP Activities

1. Identification, definition of assistance
2. Government request received
3. Terms of reference drafted
4. Activity Initiation Report issued
5. Consultant hired, staff identified
6. Mission in field
7. Draft report issued for internal review
8. Draft Report sent for Govt. clearance
9. Report agreed with Govt. and issued in final

March 1, 1984
MAhmed:asf.

ENERGY SECTOR MANAGEMENT ASSISTANCE PROGRAM

**Status Report as of March 1, 1984
and Proposed Work Program to May 31, 1984**

I. EAST AFRICA

Burundi

Negotiations with Private Oil Companies The objective of this task was to provide technical advice to the Government to help prepare it for negotiations with a private oil company on exploration activity in Burundi. The substantive work has been completed and comprised missions by consultants in the areas of exploration strategy and preparation for negotiations with Amoco. Some reinterpretation of gravity data was also carried out. A report on this activity will be issued in March, 1984.

Assistance for Energy Round Table An ESMAP mission (Petcu/King) helped the Government prepare a portfolio of priority investment and technical assistance project profiles which were presented to potential donors at the UNDP sponsored Round Table meeting in Bujumbura in February, 1984. Preliminary reports from the field indicate that a number of donors have expressed interest in financing some of the identified projects.

Ethiopia

Power Sector Efficiency Audit This exercise will be similar in scope to those carried out for Kenya and Sudan with the exception that the efficiency of small diesel plants will also be examined on a sample basis. The terms of reference and timing of the mission (April) have been agreed with the Government.

Kenya

Energy Assessment Status Report An Energy Assessment Status Report, based on a recent staff mission (Newcombe) was sent to the Government for final clearances in August, 1983. The report has identified a number of areas where further technical assistance is necessary. A February, 1984 mission discussed the report and its follow up with the Government but formal clearance of the report for distribution is still awaited.

Solar Water Heating A CIDA supported project will help to establish solar water heating as a major alternative to electric/oil-fired heaters in the residential/commercial sectors. The project builds upon one of the recommendations of the assessment report and is well conceived, structured and managed. However, the Government has asked for ESMAP

assistance to provide technical and policy advice on this question on an ad hoc basis. The total input is unlikely to exceed two weeks per year.

Power Sector Efficiency Audit The objective of this audit is to define short and medium term measures to implement cost effective modifications to system facilities, operations and construction standards that will improve the technical efficiency of the power system and reduce non-technical losses. The audit was conducted by a two-man team (Messrs. Banks and Colette) which visited Kenya in early September. The mission has identified a $11 million investment and TA package for reducing system losses and rehabilitating the Kipevu steam plant. These investments are expected to result in annual benefits of $10.5 million. The mission's report has been discussed with the Government and is being finalized in the light of their comments.

Malawi

Institutional Arrangements for Energy Planning The Government has prepared draft terms of reference and scope of responsibilities for the recently created Energy Unit in the Economic Planning Division. The objective of the September ESMAP mission (Ansari) was to assist the Government in finalizing these proposals and in defining their resource and manpower requirements. This mission also identified the specific technical assistance needed to strengthen the energy planning unit in its initial operations; this is to be provided under the Technical Assistance loan associated with the second SAL. The mission's findings are summarized in the President's report for this TA project. However, because the Government has proposed further changes in the institutional framework, the circulation of an ESMAP Activity Completion Report has been postponed until after a proposed supervision mission for the TA credit in June, 1984.

Rwanda

Energy Assessment Status Report A draft of this report, prepared on the basis of a September, 1983 mission was discussed and cleared with the Government in February, 1984. The final report will be issued in March.

Seychelles

Power System Efficiency Improvement Study A mission is planned for March 18-30 to define the scope, costs and benefits of a technical assistance project to improve the efficiency of the electric power system. The program envisaged would include (a) development of a cost related tariff structure; (b) a training program in the optimal operation of diesel-fired generating units; (c) development of an efficient maintenance system plan; and (d) improvement of the power factor through the installation of capacitors.

Sudan

Power System Efficiency Audit The objective of this exercise is the same as described above for Kenya. A draft report of the team's findings and recommendations has been sent to the Government and will be discussed with them by a mission (Alahdad) tentatively scheduled for mid-March.

Uganda

Petroleum Import Arrangements The Assessment Mission endorsed an urgent Government request for assistance in rationalizing procedures and documentation for imports of petroleum products by private marketing companies. This was subsequently provided through a three-week mission in January/February 1983, by a consultant expert (Ogmen). The results of his work and a proposal for longer term assistance to the Bank of Uganda's petroleum desk is summarized in a report which was circulated within the Bank for comments. However, further processing of this report has been held up pending a decision by the Government on the allocation of responsibility for petroleum import management between the Bank of Uganda and the Ministry of Energy. This matter will be discussed by the proposed March, 1984 mission.

Identification of Further Technical Assistance In response to a request from the Government, a mission will visit Uganda in early March, 1984 to discuss possibilities of initiating further technical assistance under ESMAP to define projects/feasibilities which could be financed from bilateral and multilateral funds including the Bank's current Technical Assistance Credit. Possible areas which will be discussed include institutional strengthening of energy sector management, energy conservation in the industrial, agro-industrial and transport sectors, and further improvement in petroleum import arrangements.

Zambia

Energy Assessment Status Report A mission has been tentatively scheduled for June/July, 1984 to prepare this report. That mission will also help to clarify the requirements for institutional assistance to the NEC.

Zimbabwe

Energy Assessment Status Report The draft report has been sent to the Government for clearance. Several of the technical assistance priorities identified in the report have been included in the UNDP Country Program and the ESMAP will be the executing agency. A follow up mission (Armar) is planned for March/April to identify the scope and timing of technical assistance for an energy efficiency program.

CAPCO: Institutional Review The Governments of Zambia and Zimbabwe have asked the Bank to assist in the work of a bilateral commission which has been set up to review the future role and functions of the Central African Power Company (CAPCO). ESMAP funding is being used to finance the services of the outside chairman (Damry) for this commission. The

commission's work is expected to finish in April and a report on this activity will be prepared thereafter.

II. WEST AFRICA

Gambia

Solar Water Heater Retrofit The Assessment mission's recommendation to retrofit diesel-fired and electric water heating systems at major hotels and the brewery in the Gambia was endorsed by the Government. A mission (Armar/Chronowski) will visit the Gambia in March/April, 1984 to complete preparation of a pre-investment report on the project which would cost about US$750,000.

Petroleum Supply Management Assistance A mission (Armar) will visit the Gambia in March/April, 1984 to complete preparation of terms of reference for this activity which will help the Government to prepare a Contingency Allocation Plan for petroleum products to be used during shortages; to evaluate the feasibility of establishing a new petroleum storage depot; and to evaluate the relative costs of alternative petroleum import arrangements.

Senegal

Energy Assessment Status Report The July, 1983 Energy Assessment Report has generated considerable interest in follow up both within the Bank and among bilateral donors (notably Canada and France). However, it is not clear as to what concrete follow up is actually taking place and the Government has recently requested ESMAP assistance to help organize the follow up to the report. The proposed status report mission, tentatively scheduled for May, will help to clarify the situation and define the scope of further ESMAP assistance in Senegal.

III. LATIN AMERICA AND THE CARIBBEAN

Haiti

Energy Assessment Status Report A mission comprising Ms. Weimper and Mr. King is in field to carry out this exercise.

Peru

Improved Cookstoves Program This exercise will help the Government to review its existing ICS program and to define any changes in direction or institutional managements etc. necessary to increase the program's effectiveness. However, ESMAP assistance is subject to clarification of apparently similar proposal by FAO.

IV. EAST ASIA AND PACIFIC

Indonesia

Energy Assessment Status Report A mission has tentatively been scheduled for April, 1984 to prepare this report and to identify the potential for ESMAP assistance in the country.

Papua New Guinea

Institutional Review of the Energy Sector The June, 1983 assessment status report mission identified this task as one of high priority. The Government requested that such a review be carried out under the ESMAP. A mission (Prasad, Alahdad and Dumestre) visited PNG in October/November, 1983 to conduct this review. Their recommendations on institutional restructuring, staffing, training and technical assistance have been endorsed by the Government and the mission's draft report was sent to the Government in January, 1984. Their comments are expected in early March and, following their incorporation, the report will be issued in final.

Electricity Tariffs and Regulations for Auto Generation a number of electricity auto generation and cogeneration opportunities have been identified but are not being exploited because of the inappropriate tariffs/regulations governing this activity. A consultant mission visited Papua New Guinea in November, 1983 to assist the Government/Elcom in reviewing and modifying these regulations. A draft report on this activity has been circulated for a working level review.

V. SOUTH ASIA

Bangladesh

Energy Assessment Status Report The Energy Assessment Report for Bangladesh was issued in October, 1982. Since then there have been a number of developments in the sector, including the preparation of a renewable energy sub-project by the Bank. Other donor agencies have also acted on recommendations made in the Assessment. These developments were summarized in a status report prepared by a November, 1983 mission (Mitchell). The report also identifies further areas where technical assistance is required. The report has been sent to the Government for their comments/clearance and may be distributed to the next Aid Group meeting for information.

Sri Lanka

Efficiency Improvements in the Rural Industries Study The objective of this study is to evaluate the various technical options for improving the energy (wood and oil products) efficiency in selected rural industries (copra drying, tea drying, brick making) in Sri Lanka, and to define a program to achieve these improvements. The study is expected to cost about $180,000 and will be cofinanced by the EEC ($100,000) and possibly, the Dutch Government. A short mission is planned in March to speed up

the decision-making process of the Government. An Activity Completion Report describing the proposed work and financing arrangements will be issued in March. A short mission to Colombo is also planned in March to finalize these arrangements with the Government.

Industrial Energy Conservation The object of this exercise is to assist the Government in preparing detailed terms of reference for feasibility studies of about 15-20 energy efficiency improvement projects in the larger industries. The assistance provided will build upon an existing USAID supported energy efficiency training program. The terms of reference produced through this activity will be picked up by various donor agencies who have expressed an interest in financing the subsequent feasibility studies. The field work for this activity will be carried out in April/May, 1984.

MAhmed:aaf.
March 1, 1984

Part IV

ENERGY SECTOR MANAGEMENT ASSISTANCE PROGRAMME

Activity Status as of March 1, 1984

Country	Project	Report 1/ Completed	Work in Progress	Work to start in next 3 Months	Technical Assistance or Investment Follow-up Identified
1. Energy Assessment Status Reports					
Bangladesh	Status Report		X		
Burundi	Status Report	X			X
Haiti	Status Report		X		
Indonesia	Status Report			X	
Kenya	Status Report		X		X
Malawi	Status Report	X			X
Mauritius	Status Report	X			X
Papua New Guinea	Status Report	X			X
Rwanda	Status Report		X		X
Senegal	Status Report			X	
Sri Lanka	Status Report	X			
Zambia	Status Report			X	
Zimbabwe	Status Report		X		X

1/ Report and follow-up agreed with Government.

Country	Project	Report 1/ Completed	Work in Progress	Work to start in next 3 Months	Technical Assistance or Investment Follow-up Identified
2. Project Formulation and Justification					
Ethiopia	Power Sector Efficiency Audit			X	X
Gambia	Solar Water Heating			X	X
Kenya	Power Sector Efficiency Audit		X		X
Kenya	Advice and Support for Implementation of Solar Water Heating Project			X	
Malawi	Preparation of Tobacco Industry Energy Efficiency Program	X			X
Panama	Power Sector Efficiency Audit	X			X
Peru	Improved Woodstoves			X	
Seychelles	Power Sector Efficiency Audit			X	X
Sri Lanka	Industrial Energy Conservation			X	X
Sri Lanka	Power Sector Efficiency Audit	X			X
Sri Lanka	Rural Industry Energy Conservation			X	X
Sudan	Power Sector Efficiency Audit		X		X
Zimbabwe	Power Sector Efficiency Audit	X			X

1/ Report and follow-up agreed with Government.

Country	Project	Report 1/ Completed	Work in Progress	Work to start in next 3 Months	Technical Assistance or Investment Follow-up Identified
3. Institutional and Policy Support					
Bangladesh	Priority Investment Program for Energy		X		X
Burundi	Assistance for Preparing Energy Project Profiles for Donors Conference		X		X
Burundi	Assistance for Petroleum Supply Management	X			X
Burundi	Assistance for Developing Petroleum Exploration Strategy		X		
Gambia	Petroleum Supply Management			X	
Malawi	Institutional Review and Identication of Technical Assistance Requirements for Energy Planning		X		X
Papua New Guinea	Institutional Review and Identification of Technical Assistance Requirements		X		X
Papua New Guinea	Advice on Electricity Tariffs and Regulations for Auto-Generation		X		
Sudan	Management Assistance to the Ministry of Energy and Mining	X			X
Uganda	Advice on Petroleum Import Arrangements		X		X
Zambia/ Zimbabwe	Capco: Support to bilateral commission reviewing future role and functions		X		X

1/ Report and follow-up agreed with Government.

MAhmed:aaf.
March 1, 1984

Part V

ENERGY SECTOR MANAGEMENT ASSISTANCE PROGRAM

Potential Cofinancing Opportunities

The bulk of ESMAP activities cost under $100,000 each and are funded entirely from the Program's own resources. However, ESMAP staff have also identified a number of larger feasibility studies or pilot projects which could be implemented on a cofinancing basis with interested donor agencies. These activities would, however, continue to be managed by the staff working on ESMAP. Cofinancing support is currently being sought for the following ESMAP projects:

Sri Lanka: Rural Industry Efficiency Study

This study would evaluate the potential for reducing wood and petroleum consumption in Sri Lanka's rural industries (tea and copra processing, brick making etc.) by improving their currently low level of energy efficiency. The output would be a prefeasibility report incorporating a detailed program of work to affect these improvements as well as the associated costs, manpower, institutional and regulatory requirements. The project would be implemented over a twelve-month period at an estimated total cost of $175,000. The EEC has already expressed interest in contributing $100,000 towards this cost. Additional cofinancing contributions are being sought.

Niger: Improved Urban Cookstoves Project

The objective of this project is to establish a self-sustaining production and marketing system for the dissemination of portable and prefabricated improved woodstoves. The project will build upon the successful experience gained during the development and dissemination of the "Ouaga stove" in Upper Volta. The project would be implemented in two phases. Phase I will establish the feasibility of the approach and carry out production and marketing on a pilot basis over an eight-month period at a cost of $150,000. Subject to the successful evaluation of the first phase, Phase II will expand these efforts to a larger scale over an 18-month period at a cost of $350,000. The EEC has agreed to contribute $100,000 to the cost of Phase I, and is likely to contribute to Phase II. Discussions on cofinancing support for both phases are also underway with the Dutch and German governments.

Kenya: Coal Import Action Plan

This study will assist the Government in formulating an overall strategy and action plan for increasing the use of imported coal in the industrial (and potentially) power sectors. The study will evaluate the potential market for coal, the infrastructure and handling required to meet this market and the alternative mechanisms for importing, distribut-

ing and financing coal supplies. The study is expected to cost $450,000 and would be implemented over a 12-month period. Discussions on a potential contribution are underway with CIDA.

Kenya: Feasibility Study of Peri-urban Fuelwood Plantation

This study will build upon the work done by the Government of Kenya and various donor agencies by undertaking a preinvestment analysis for 25,000 ha of peri-urban plantations to be established by 1990 and by identifying the key policies and incentive systems required to ensure the timely implementation of this program. The study will also prepare a broader plan of action for the longer term and will help the Government to define its role in investment planning and implementation in this important subsector. The project will take about eight months to complete and is expected to cost $260,000. Discussions on cofinancing support are underway with the Canadian and Dutch governments.

Ethiopia: Crop Residue Briquetting Project

This project will evaluate the technical and economic feasibility of utilizing surplus coffee husks and other crop residues as an industrial and household fuel. The project would allow for the installation of two coffee husk briquetting presses and for monitoring the production and marketing of their output to selected household and industrial users over a 12-month period. The project would also fund a detailed feasibility study of the optimum technical package for harvesting, processing and storing cotton, corn and wheat crop residues. The project would cost about $200,000. Cofinancing contributions are being sought.

Ethiopia: Improved Stoves Project

This project will help to establish a self-sustaining improved stoves program for urban households building upon the existing artisanal capacity for stove production. The first phase of the project is estimated to cost $200,000 and to last about 12-15 months. The ILO have agreed to contribute staff resources for the project but additional cofinancing support is required.

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Detailed profiles for the above projects, as well as additional information on opportunities and mechanisms for cofinancing of ESMAP projects can be obtained from either Julian Bharier (477-2781) or Masood Ahmed (477-4545) in the Energy Assessments Division of the World Bank.

March 1, 1984
MAhmed:aaf.

Chron

NOTE

Robin:

The following information relates to items that might require follow-up during my absence. Ziad, who has a copy of the note, is generally informed about these activities and could help you in coordinating any action needed.

Sri Lanka: Transport Sector Conservation Program.

Gary is preparing the Activity Initiation Report which outlines scope of proposed work. Consultant has been recruited and TORs drawn up. The AIR should be circulated by May 13 as consultant scheduled to arrive in Colombo May 28. Gary is aware of deadline but may need further follow-up.

Haiti: Energy Assessment Status Report.

Noel's draft near completion. Should be sent to Region by May 13. Only possible snag is turnaround on word processing.

Ethiopia: Power Efficiency Study.

Gulstone's draft will be ready next week then word processing.

Rwanda: Energy Assessment Status Report.

Regional clearance (formally) expected tomorrow. Noel has drafted letter to Government and memo to Region etc. to circulate final report. I have reviewed. Just requires your clearance/signature.

Burundi: Petcu's Report on Investment Possibilities.

I have signed cover memo for circulation of draft report to Region/Front Office. Should go out tomorrow. No further action required till my return. Noel will obtain and organize comments for next step.

Kenya: Solar Water Heating Project.

Ken is drafting a letter to Government and CIDA which needs to be sent ASAP. Ken will follow-up.

Nepal: Energy Assessment Status Report.

Based on our discussion I have assumed that John Tillman will not be available for this task and have asked Noel to prepare for late June/early July mission.

Uganda: Energy Assessment Status Report/Institutional Review.

Ziad and Frueh will be leaving end-May for EASR and Institutional Review mission. Will be joined by Kennedy (consultant) whose detailed TORs have been prepared and need your clearance/signature.

Senegal: Energy Assessment Status Report.

I have asked Willem to handle this and to prepare for late June mission. I will probably join him. Also someone from Gamba's unit.

Niger: Stove Project.

A letter to the Government and a revised project document are being prepared by Willem. I have reviewed letter which is okay. Copies of the letter and prodoc should also go to GTZ and EEC. Willem will organize.

Botswana: Green Cover Discussions of Assessment Report

Durdag (country economist) called today to say that he had spoken with Ministry of Finance officials who would like the Green Cover discussions of assessment postponed to early June because May timing proposed conflicts with President's visit to U.S. and many key actors will be away. They arrive Washington May 10 and we agreed that timing of mission would be finalized then. Also they have not yet received Green Cover drafts which were sent April 5. Mailroom claims airfreight takes five weeks so the reports should be arriving any day but in any event too late for May 14 discussions. Angelica is informing Kwei in Accra. As we have not received response from Zimbabwe on Kwei's proposed mission either, I have asked Kwei to check directly with UNDP resident representative in Harare and if no response to return to Washington. Otherwise he will go only to Harare.

India: Conservation Paper.

D.C. indicated that report should be processed quickly. Gary's draft requires further work to be translated into 30-page issues paper. Julian has the copy.

Power TOR Portfolio

Ziad has revised this document in the light of comments made at the review meeting. The next step is to type these revisions in the draft and to proof the document. May need your help in getting this job some priority as it has already been slipped quite a bit. After that it will be issued in final. Perhaps Rodrigues could help in the proofing.

Divisional Objectives

I have sent Gary my comments. The operations program for ESMAP should be included in detail; I have given Gary a copy of it.

MIS

The task force meets again on May 11. You will probably have to attend on Julian/my behalf. At this stage we need to define what information should be supplied to Mr. Dherse on the ESW program. I have drafted a memo to Weissman setting out my views. Julian should review before it is sent out.

Interunit Support with INDEC

Harinder Kohli asked me today to send him a note confirming the arrangements we agreed with Julion on this issue. I have drafted the note and left for Julian to clear.

I think that covers the main items. If anything unexpected crops up I can be reached in Jakarta. Angelica has a copy of the itinerary. Hope the Ottawa trip went well. See you in two weeks.

Masood

cc: Julian

MAhmed:aaf.
May 2, 1984

THE WORLD BANK/INTERNATIONAL FINANCE CORPORATION

OFFICE MEMORANDUM

To: Mr. Harinder Kohli, Assistant Director, IND May 2, 1984

From: Masood Ahmed, Deputy Chief, EGYEA

Subject: Interunit Support for FY85

1. You asked me to confirm the arrangements we made with Julio Gamba for interunit support between our divisions in FY85. When Julian Bharier and I discussed this with Julio we agreed that our division would call upon INDEC for a minimum of 22 SW of staff support for assessment and ESMAP work in FY85. Approximately 10 SW of this would be for participation in assessment work and the remainder for ESMAP activities in the area of industrial energy conservation. We identified a tentative list of countries which we would jointly finalize in the near future. To reflect these arrangements, we will show an input of 22 SW in our FY85 budget as support from INDEC; conversely, INDEC's budget submission will show 22 SW of applications as support to EGYEA.

2. We also agreed that these arrangements reflected the anticipated input of INDEC staff in these activities. To the extent that consultants were required for assessment or ESMAP activities that related to industrial energy conservation, these would be paid for directly by EGYEA. We would also pay for the direct costs of INDEC staff travel on assessments/ESMAP work.

3. If, during the course of the year, our joint discussions indicate that additional input from INDEC staff would be required for the assessments/ESMAP programs then we would together identify whether INDEC could provide this support and how it would be reimbursed. Similarly, if INDEC were unable to supply the agreed commitment of 22 SW, we would together work out how EGYEA would be reimbursed for the shortfall.

4. I hope this note will clarify the proposed arrangements.

cc and cleared with Mr. Bharier (EGYEA)

cc: Messrs. Gamba (INDEC); Weissman (EISVP)
Rao, Bates, Heron (EGY)

MAhmed:aaf.

Mr. Rovani

I/Ves:

Attached is a brief note summarising the points discussed yesterday morning. Zia is getting the flipchart pages typed up which could be added as annexes.

Masood.

5/1

Work Program Issues Discussed at EGY Manager's Retreat, April 30, 1984

During FY85, the Department will require additional resources to carry out some of the following tasks which are now considered to be of high priority but for which no resources were allocated in the FY85 budget. These tasks are:

1. Expansion of country focus efforts to major countries for which ESP's are not scheduled.

2. Better focus of power operations.

3. Lead Advisor.

4. MIS.

5. Private sector initiatives.

6. Gas; development of project pipeline, analytical underpinnings, etc.

7. Prefinancing of petroleum operations in countries where no current operations but major potential role (primarily in LAC).

8. Supervision cost of numerous studies financed under petroleum projects which are nearing completion (especially China).

9. Possible failure of UNDP resources promised for assessments to materialize in time.

The options open to the Department to try and carry out these tasks are limited, given that (a) additional budgetary resources are unlikely to be made available, and (b) the possibility of deferring work on agreed commitments is small. Thus, the main alternatives are:

1. Monitor work on all operations to ensure that we stop work before the point of no return if it is clear that the project is unlikely to be approved or that cost of approval (regional/country/etc.) is too high.

2. Agree at an early stage in each project on the issues that will be analyzed in the context of project preparation/appraisal. In complex projects/sectors, be selective in the choice of issues and get regional agreement on this choice.

3. Reduce project preparation/appraisal cost by getting borrowers to pay for some preparatory work where this is feasible (particularly middle income countries).

4. Do ESW (and other work) only in countries where there is strong country (and where appropriate Bank) commitment to follow up on the results.

5. Renewables - redirect Departmental resources to focus on policy work and support to country strategy. Restrict involvement in renewable components unless reimbursable. Carry out global monitoring projects only if cost of Bank involvement is reimbursed by other participants. Evaluate whether reorganization would result in economies of scale and lower costs.

6. Power - redirect resources to more upstream intellectual leadership; minimize the use of advisory staff as substitute for regional staff on operations.

7. Actively solicit resources from other donors to help finance not only assessment and ESMAP but other areas such as renewables, studies in other output, etc.

8. Identify if resources could be released by improving the efficiency of existing way of doing business (project processing, etc.) as well as through organizational changes.

9. Develop integrated picture of Bank involvement in energy country by country to see if economies of scale can be affected through better coordination.

10. Examine whether the resources required to supervise the studies included in petroleum projects could be obtained from the ESW budget by explicitly including this as tasks in the ESW programming exercise. For future projects, evaluate carefully whether resources are available for supervision before including study components.

MAhmed:aaf.
May 1, 1984

OFFICE MEMORANDUM

To: Mr. Michael Wiehen, ASADR May 1, 1984

From: Julian Bharier, Chief, EGYEA

Subject: Sri Lanka: Kelanitissa Steam Plant Rehabilitation Project

1. Attached is a short note on this project, for which a prefeasibility study was done last summer under the joint UNDP/World Bank Energy Sector Management Assistance Program. Preliminary analysis of the project indicates that it should be a high priority for the Ceylon Electricity Board: the estimated investment of $1.5 million would generate annual benefits of $2.8 million. The project could be implemented during 1985 when the availability of hydropower from Victoria would enable CEB to withdraw the Kelanitissa plant from service. Because of its relatively small size and quick payback, a number of agencies have expressed interest in funding the project. Most recently, the UK consulting firm of Kennedy & Donkin has sent CEB a proposal for carrying out the work and they have also arranged $2 million of financing for the project.

2. We are keen to see this project implemented quickly because it is an obvious priority for the country but also because it was one of the first projects prepared under the Energy Sector Management Assistance Program and its successful implementation would benefit our continued fund raising efforts from the donor community for the Program. (As you probably know, this Program is executed by the Bank but funded largely from contributions by bilateral and multilateral donor agencies).

3. The Ministry of Energy and the CEB accept the priority of the project but are moving slowly on it mainly because of the weak technical and management capacity in the CEB. We recognize the limitations imposed by the CEB's project implementation capacity but this particular project could be organized with relatively little inhouse effort by hiring consultants to act as project coordinators or prime contractors (the Kennedy & Donkin proposal is along these lines). To get the CEB's senior management to focus on this project, I believe it would be extremely useful if you could raise the issue during your forthcoming visit. You should find Mohan Munasinghe to be supportive of the project as well.

4. Many thanks for your help.

Attachment.

MAhmed:aaf.

PROJECT BRIEF

Sri Lanka
Rehabilitation of Kelanitissa Steam Plant (KSP)

Background

KSP comprises two 25 MW oil-fired units which are about 20 years old and as a result of deterioration, the overall plant capacity has been derated to 35 MW. The plant heat rate is 30% higher than normally acceptable levels. This is inspite of a partially completed rehabilitation effort initiated on the basis of a consultant's report prepared in late 1979. It is understood that the Ceylon Electricity Board (CEB) intends to complete this work for which funds are presumably available. The proposed project consists of further rehabilitation which would restore the plant to rated capacity and provide the system with an additional 10 MW of reliable capacity.

Description

The proposed rehabilitation involves a number of specialized tasks which need to be supervised by original manufacturers or suitably qualified consultants/contractors. Consultants would be appointed for: initial on-site inspection; review of the work done till date; preparation of detailed plans for further rehabilitation work including on-the-job training of CEB staff; and supervision of contractors appointed to carry out the work. Bulk of the expenditure would be for replacement of burners, valves and lines and the rehabilitation of control systems, variable speed fan drives and the chlorination system. The project would increase the useful life of the plant by about 10 years and render it capable of base load service during the dry season.

Project Duration:

18-24 months.

Capital Cost:

Estimates of foreign exchange costs are given below. Local costs would add about 10%.

Item	Cost ($000)
Consulting Services	250
Contractors	150
Burner Replacement	270
Control Rehabilitation	210
Variable Speed Fan Drives	175
Chlorination System	60
Valve and Line Replacement	60
Other Rehabilitation Work	81
Contingencies	144
TOTAL	1,400

Benefits

The system losses resulting from the deterioration of the generating plant have been assessed on the basis of long-run marginal costs in terms of incremental capacity-related and energy-related costs. Annual economic benefits derived from the rehabilitation program as a result of a reduction in losses are estimated at US$2.811 million. This gives a payback of about six months which provides compelling grounds for implementing the program as a matter of priority.

ZAlahdad:aaf
May 1, 1984

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(3/82)

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INTBAFRAD, ACCRA, GHANA

FOR WORLD BANK EMPLOYEE ARMAR

BOTSWANA GOVERNMENT HAS ASKED FOR GREEN COVER DISCUSSION MISSION TO BE POSTPONED TILL EARLY JUNE. WE HAVE ALSO NOT RECEIVED A RESPONSE YET FROM GOVERNMENT OF ZIMBABWE ON YOUR PROPOSED TRIP. GIVEN TIME CONSTRAINT, I SUGGEST THAT YOU CALL/TELEX UNDP RESREP IN HARARE ASKING WHETHER PROPOSED MISSION IS CONVENIENT. IF AFFIRMATIVE PROCEED TO HARARE AND THEN RETURN TO WASHINGTON. IF NEGATIVE OR STILL UNCLEAR THEN RETURN DIRECTLY TO WASHINGTON. WE COULD THEN SCHEDULE JOINT MISSION TO ZIMBABWE AND BOTSWANA IN JUNE.

BEST REGARDS, AHMED, DEPUTY CHIEF, ENERGY ASSESSMENTS, ENERGY DEPARTMENT.

END OF TEXT

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CLASS OF SERVICE: Telex TELEX NO.: 974-2207 DATE: 05/01/84

SUBJECT: Botswana: Energy Assessment

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EXTENSION: 74545

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cc: Mr. Bharier (o/r)

AUTHORIZED BY (Name and Signature): Masood Ahmed, EGYEA

DEPARTMENT: Energy

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The World Bank's energy program

What the Bank does and why

Masood Ahmed

The World Bank accords a high priority to energy; its high cost continues to be a major concern for most developing countries and their adjustment to the increased costs is far from complete. As a group, the oil importing developing countries still spend one fifth of their export earnings on importing oil, and some, such as Turkey or Bangladesh, spend much more. Despite the major shifts in pricing structures, investment programs, and economic policies that have already taken place in many countries, much remains to be done to ensure that energy is used efficiently and to develop and utilize cheaper alternatives to imported oil.

This task remains urgent despite the recent drop in international oil prices; most investments in increasing indigenous energy production and improving the efficiency of energy use will generate high economic rates of return even at a substantially lower oil price. The main constraints on higher investments are their massive financing requirements (estimated at about $130 billion per annum in a recent Bank report, The Energy Transition in Developing Countries) and the need to strengthen management capabilities in the energy sector to permit larger and more diversified investment programs. The Bank has a significant contribution to make in assisting developing countries to overcome both constraints. In addition to its own lending, it plays an important catalytic role in mobilizing both local resources and external funds through cofinancing and direct private

investment. Equally important, it assists developing countries through policy advice, institutional strengthening, technology transfer, and improved project selection, design, and implementation.

The Bank's program

In response to the developing countries' changing priorities, the Bank has greatly expanded and diversified its energy program. In the fiscal year ending June 30, 1983 (fiscal year 1983), it lent $2.97 billion (including both IBRD loans and IDA credits) for 40 energy projects in 29 countries (see table). This level of lending--20 percent of the Bank's total lending that year--was double the $1.4 billion lent in fiscal year 1979 and supported a much more diversified range of projects. The growth of the Bank's lending for energy paralleled its growing involvement in providing advice and technical assistance on energy issues to member countries. Under the joint United Nations Development Program/ World Bank Energy Assessment Program, started in November 1980, energy assessment reports have been prepared for 29 countries. More recently, an Energy Sector Management Assistance Program has been started, also with the UNDP, to assist countries in implementing the policy and invest ment recommendations of the energy assessment reports. Supporting this growth and diversification has been a large increase in the number of Bank staff working on energy.

The Bank is the single most important source of external capital for energy development in the developing countries, but its finance still accounts for only a fraction of the funds they require for energy sector investments. As a result of its efforts to mobilize additional

external finance, between fiscal years 1979 and 1983, the Bank's energy lending of $12.9 billion was associated with another $12 billion of cofinancing from external sources. To further stimulate the interest of co-lenders, the Bank has recently introduced a trial program of new cofinancing instruments (called "B" loans) under which the Bank participates directly or accepts a contingency commitment in a commercially syndicated loan. The first "B" loan for the energy sector was approved recently to help finance an industrial energy diversification project in Hungary. In addition to the cofinancing directly associated with its projects, the Bank has sought to increase the level of direct private investment in energy in developing countries, particularly in the petroleum sector, through a variety of specific instruments and through a general dialogue with national policymakers on the legislative, contractual, administrative, and pricing framework governing these investments.

Along with its financial involvement, the Bank has made a major effort to assist its member countries in strengthening their management of the energy sector. Decisionmaking in the energy sector has become much more complex because policy and investment options are diverse and interlinked, sector investment programs and resource requirements are much larger than previously, and potential sources of financing are more numerous. To assist sector management, the Bank builds on its traditional strengths in project selection and implementation, in strengthening institutions and management capacity, and in analysis and resolution of key sector issues. Project selection is thus based on a

review of sector objectives, priorities, and investment options.

Ensuring that the project's design represents the least-cost solution frequently involves an analysis of alternative development options for the energy supply system as a whole, because the performance of individual projects is often closely interlinked. The Bank also makes special efforts to ensure that the design of a project will help transfer new technology that can benefit the sector as a whole. Equally important is the design of project implementation arrangements, which will create a team of managers to maintain, operate, and expand the facilities provided under the project.

The Bank's approach to project financing also ensures continuing interaction between specific project issues and overall sector policies and priorities. At the stage of project appraisal and negotiation, overall sector issues are often discussed in detail and agreements reached on specific programs. The range of issues addressed may include the formulation of subsector development strategies, demand management and pricing, institutional reform, resource utilization, and the respective roles of public and private agencies in the sector.

Nonproject assistance

The Bank's participation in specific energy projects is only one vehicle for the analysis of energy sector issues and dialogue with national policymakers. An equally important and complementary mechanism is the increasing volume of nonproject assistance provided through sector studies and support for preinvestment work. The largest component of this work is the joint UNDP/World Bank Energy Assessments

Program, which is designed to help individual developing countries formulate a strategy for addressing their principal energy issues. Energy assessment reports have been completed or are under preparation for 48 countries; 22 more are expected by December 1985, when the program is scheduled to end. The assessments analyze the scope for changes in pricing, institutional arrangements, and other policies to encourage domestic energy production and the more efficient use of energy. The reports are prepared by in-house staff and experts brought together for this specific purpose, with the close collaboration of host government officials and the staff of the major energy agencies in the country. An unusual feature of these assessments is that the final reports are circulated to all the major donor agencies and can therefore be used as a tool for aid coordination and as a framework for multilateral and bilateral assistance to the energy sector. For example, they have been used at meetings of Consultative Groups for Bangladesh, Indonesia, Nepal, Sudan, and Uganda, and at the UNDP-sponsored Round Tables for Burundi. More important, the governments concerned are making extensive use of the advice provided by the assessments.

A related program, the Energy Sector Management Assistance Program was started with the UNDP in April 1983 to help countries implement the main recommendations of the assessment reports. ESMAP provides staff and consultants to define and justify the policy, investment, and technical assistance options identified by the assessments so that national policymakers, private investors, and official assistance agencies can act more rapidly to implement them. A major focus of the

ESMAP is on preinvestment studies, which carry out the preliminary feasibility and costing of priority projects and provide a detailed action plan for their subsequent preparation and/or implementation. Examples include the definition of an energy efficiency improvement project for the tobacco industry in Malawi, a solar water heating project for hotels in The Gambia, and power system efficiency improvement projects in a number of countries. In addition to project preparation, the ESMAP can also assist in the analysis of institutional and policy options and the definition of technical assistance requirements for establishing an effective energy sector management capability.

As with the Energy Assessments Program, ESMAP reports are also circulated to all interested donors and can be used as a basis for programming their assistance. In the first year, about 40 specific activities had been completed or were underway in 18 countries. The initial impact of this work has been extremely encouraging, particularly in the area of project generation, where nearly all the projects formulated and justified by the ESMAP reports so far have been, or are being, taken up by donor agencies.

Finally, in addition to its sector analysis, technical assistance, and project financing, the Bank's structural adjustment lending also frequently provides the mechanism for discussing and resolving important energy sector issues. Most of the ____ structural adjustment loans approved in fiscal year 1983 include some emphasis on restructuring energy policy and programs. This emphasis is expected to continue because, for many developing countries, changes in energy supply and demand

patterns will be an integral feature of their overall adjustment efforts.

Subsector priorities

Despite the recent diversification in the Bank's energy program, electric power remains the largest component, accounting for 60 percent of the total energy lending in fiscal year 1983. This is partly a reflection of the continuing high requirements for electric power investments in the developing countries--approximately $60 billion per year--as well as the fact that these investments have to be implemented almost exclusively by the public sector. However, although electric power projects are the most established form of Bank lending, their selection and design have been fundamentally affected by the rise in oil prices. The analysis of power generation projects has become more complex because alternatives are more numerous and because their implementation often has to be closely coordinated with primary energy development projects in other subsectors.

An important lesson of the Bank's recent experience with the power sector is the need to improve the efficiency of existing plant and operations, which can often delay expensive investments in new capacity. Audits of existing generating plants carried out under the ESMAP in Kenya, Sri Lanka, and Sudan have identified relatively low-cost measures that will improve the operating efficiency and reliability of plants as well as add to available capacity. Similarly, excessive losses in transmission and distribution, frequently due to neglect because available resources are generally used for new generating capacity, can also be reduced quickly and cheaply through the rehabilitation and redesign

of existing facilities. In fiscal year 1983, 5 of the 15 power projects were primarily aimed at improving transmission and distribution facilities and the focus on this area is expected to grow.

The Bank's oil and gas program has expanded particularly rapidly since the first loan in 1977 for the development of the Bombay High oil field in India. In fiscal year 1983, oil and gas lending reached nearly $1 billion for 17 projects covering both predevelopment and development activities. This program has three objectives: first, to help develop realistic and appropriate national petroleum sector strategies that will maximize the contributions from all sources; second, to help countries increase the level of private sector activity in the country; and, third, to help governments finance and implement effectively their own programs for petroleum exploration and development wherever this is appropriate. For most of the countries covered by the Bank's oil and gas program, attracting outside private financing is urgent, and the Bank's exploration promotion projects respond most directly to this need. By the end of fiscal year 1983, 26 exploration promotion projects were approved. These make available better data on geological prospects for private investment and assist in developing investment terms and conditions that balance the interests of the country with those of the investor.

The involvement in Guinea-Bissau is a good example. International oil companies had explored there unsuccessfully and abandoned all acreage. To stimulate new interest, in fiscal year 1981 the Bank financed a new limited offshore seismic program. The data produced were integrated with previous statistics and the package was then made

available to industry along with an invitation to submit exploration investment proposals. By the end of 1983, new exploration agreements had been signed with six companies. A follow-up project in fiscal year 1983 will help the country acquire and package additional geological information on prospective areas. Exploration promotion projects have reached the negotiation stage in 13 countries, with 20 exploration agreements signed and another 11 at an advance stage of preparation.

During fiscal year 1983, the Bank also supported the exploration and/or appraisal activities of national oil companies in five countries. The basic rationale for this type of Bank lending is that in a number of cases, the priority attached to exploring a particular field by the international oil industry--which has to make worldwide choices in allocating its limited technical, managerial, and financial resources--may differ markedly from the perspective of a host country that has more limited options. This difference is exacerbated when the area has prospects for natural gas rather than oil, because of the much more limited export prospects for the former. Of the five exploration projects in fiscal year 1983, two (in Turkey and Morocco) focused on natural gas, one (in the Philippines) on geothermal energy, one (in India) on both oil and gas, and one (in Madagascar) on defining the prospects for the development of a heavy oil deposit.

Natural gas accounts for a growing share of the Bank's petroleum development projects--$265 million, or 43 percent of petroleum development lending in fiscal year 1983. The increasing focus on gas reflects the Bank's recent experience, which has shown that potential contribution

of natural gas to meeting the energy requirements of the developing countries had been generally underestimated and the international oil companies do not have the same interest in gas production for the domestic market as they have for oil. Recent country studies have estimated that the costs of gas development are lower and the potential domestic demand is higher and more diverse than previously believed. As a result the demand for natural gas in the developing world is expected to grow rapidly in the next decade and in some large countries--such as Nigeria and Bangladesh--gas is likely to supply a high share of the incremental commercial energy demand over this period. However, the assessment of gas reserves and markets is at a relatively early stage in most developing countries and many of them require assistance in formulating an integrated gas development strategy and in defining better contractual, legal, and financial arrangements for gas production, transmission, and use. The Bank's efforts in this sector are geared to provide this assistance as well as to help finance the large investment costs for gas production and the associated infrastructure.

In the refinery subsector, the changing pattern of demand for petroleum products in the developing countries has rendered many existing refineries unsuitable and led to a growing shortage of diesel fuels and a surplus of heavy fuel oil and, frequently, gasoline as well. To tackle this problem, developing countries need to adjust relative fuel pricing and utilization policies, and increase investments in secondary processing facilities to convert fuel oil into

middle distillates. In addition there is an acute need to rehabilitate and improve the energy efficiency of existing refineries, many of which are over 15 years old and were designed to minimize capital costs and operate at energy efficiency levels that are no longer optimal. Thus while the Bank has not participated in financing refineries, it does help developing countries formulate appropriate refinery subsector strategies, evaluate the technical and economic merits of alternative conversion schemes, and finance secondary conversion and refinery efficiency improvement projects. By the end of fiscal year 1983, refinery sector reviews had been undertaken in 32 countries and were followed up by eight projects that financed either the installation of secondary conversion and energy efficiency facilities (in Argentina, Bangladesh, India, and Portugal) or engineering and technical studies to determine the most economic source of liquid fuels for the country and to help evaluate the economic and technical viability of proposed investments (in Pakistan, Peru, Zambia, and Zimbabwe).

The Bank's involvement in the coal subsector is relatively recent; three of the eight projects in the sector were approved in fiscal year 1983. Their principal focus is to help developing countries overcome the recurrent constraints of the absence of a coherent coal development strategy; the limited availability of good geological data; poor coordination between coal production, infrastructure, and utilization projects; and an institutional framework beset by a range of bureaucratic obstacles. These constraints have raised the cost of domestic coal production in many developing countries and are retarding the

substitution of coal for more expensive oil. To help developing countries identify and overcome these constraints the Bank carried out coal/lignite subsector studies in 27 countries over fiscal years 1978-83 and has followed up with specific projects to address the principal issues identified by this work. The fiscal year 1983 Zambian project, for example, followed a coal subsector review carried out as part of the energy assessment; it will finance a detailed feasibility study to rehabilitate the Maamba Colliery, which is currently operating at only one half of capacity. The project will also finance the procurement of initial spare parts needed to keep the mining complex operating during the study period and to improve plant performance and the quality of the coal produced by the colliery.

The urgency and importance of tackling the growing fuelwood crisis in most developing countries is now widely recognized. However few countries have the infrastructure and institutional capability to support large-scale fuelwood planting. The principal lesson that has emerged from recent experience is that considerable groundwork must normally be done over several years before large-scale planting programs can be effectively implemented. The Bank's own lending for fuelwood projects has therefore grown more slowly than anticipated, amounting over fiscal years 1979-83, to about $360 million for both individual fuelwood projects and for fuelwood components in other projects. In addition to financing plantations, nurseries, and associated infrastructure, these projects have had a heavy emphasis on technical assistance and institutional strengthening. Many of them

include village level and national demand surveys; research into fast-growing tree species, agroforestry crop combinations and allied forestry research problems; introduction of more efficient wood-burning stoves and charcoal kilns; and support for strengthening forestry sector institutions.

The Bank also has a small but growing involvement in supporting the commercialization and development of other nonconventional renewable energy applications, some of which are particularly well suited to meeting the energy needs of the developing countries. Here the Bank's activities include the financing of biomass alcohol projects (in Brazil); the inclusion of renewable energy technologies in Bank projects to obtain operating experience and determine the most economic systems and applications (small-scale hydro projects in Sri Lanka, and solar and wind energy in Cyprus); and institution-building assistance to develop local capacity for utilizing renewable energy (Cyprus and Portugal). The Bank has also undertaken a systematic review of the technical and economic status of several technologies; the results of the work on biomass gasification and solar pumping have already been published.

While the bulk of the Bank's energy lending since 1979 has been for projects to develop supply capacity, there has been an increasing emphasis on efficient energy utililization through direct support for energy efficiency improvement projects. These projects complement the emphasis on energy pricing and demand management in the Bank's policy advice and are often identified through the analysis of the energy assessments and other sector studies. Most of the energy efficiency improvement projects to date have focused on the industrial sector,

which is generally the largest user of energy and on which there is a wealth of comparable recent experience in the industrial countries. These projects normally include the provision of considerable technical assistance for energy audits and institutional strengthening as well as financial support for major investments in retrofitting existing plant and processes. A good example is the $309 million fiscal year 1983 Energy Diversification and Conservation Project in Hungary, which will fund major fuel substitution programs (domestic coal and natural gas for oil and imported coking coal) as well as 62 small industrial energy-saving projects.

Conclusion

Active involvement by the Bank in the energy sector continues to be essential because of the priority accorded to the sector in the developing countries, the urgency of adjusting sector strategies, and the very large volume of financing this sector requires in all countries. Bank financing plays an important catalytic role by attracting other investors and lenders to participate in high priority, economically sound, and financially attractive projects in all energy subsectors. This resource mobilization function is particularly important because the Bank's own energy lending cannot exceed one quarter of its total lending without displacing priority projects in other sectors and will therefore continue to account for only about 5 percent of the energy investment requirements in the developing countries.

Nonetheless, within these constraints the Bank will continue with a diverse program of energy activities in response to the

them include village level and national demand surveys; land use studies; developing countries' needs. Through project financing, technical assistance, and sector assessments, the Bank will endeavor to maintain its dialogue with member countries on sectoral policy issues and to provide assistance for sector management, institutional strengthening, and implementation of rational programs of energy sector investments. The subsectoral composition of the Bank's energy lending and the content of its technical assistance activities will depend on the needs and priorities of individual countries, taking into account the availability of technical advice and financing from other sources, and the potential contribution the Bank can make not only in mobilizing financial resources but also in a wide range of other dimensions.

World Bank energy lending, fiscal years 1979-83

(Amounts in millions of U.S. dollars)

	1979		1980		1981		1982		1983		Totals 1979-83		Share 1979-
	Number of projects	Amount	Number of projects	Amount	Number of projects	Amount	Number of projects	Amount	Number of projects	Amount	Number of projects	Amount	Number of projects Amo (In percent
Power	18	1,355	24	2,392	17	1,323	21	2,131	15	1,758	95	8,959	54
Coal	-	-	1	72	1	10	3	227	3	18	8	327	5
Oil and Gas	4	112	13	385	12	650	14	539	17	1,038	60	2,724	34
Exploration promotion	-	-	5	36	6	33	8	36	7	84	26	188	15
Exploration	-	-	3	96	3	70	1	20	5	344	12	530	7
Oil development	1	3	2	60	2	462	3	303	3	345	11	1,172	6
Gas development	3	110	3	194	1	85	2	180	2	265	11	834	6
Energyvrelated industry	-	-	-	-	1	250	6	460	5	161	12	871	7
Total	22	1,467	38	2,849	31	2,233	44	3,357	40	2,975	175	12,881	100
						Energy as percent of total Bank lending							
	-	15		25		19		26		21		21	

Source: World Bank.

Note: In addition to lending for commercial energy development, fuelwood lending amounted to about $360 million during fiscal years 1979-83.

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(6-83)

THE WORLD BANK/IFC

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REMARKS:

Re our discussions.

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4/25/1984	Memorandum

Correspondents / Participants

To: A. Pertuzio and J. Taylor and C. Duval

From: Julian Bharier and Masood Ahmed

Subject / Title

UNDP/World Bank Energy Sector Management Assistance Program

Exception(s)

Attorney-Client Privilege

Additional Comments

The item(s) identified above has/have been removed in accordance with The World Bank Policy on Access to Information. This Policy can be found on the World Bank Access to Information website.

Withdrawn by	Date
Bertha F. Wilson	November 2022

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MR. MAURICE GERVAIS, INTBAFRAD, NIAMEY, NIGER. (AAA) REFERENCE YOUR TELEX OF APRIL 11 INQUIRING STATUS OF PROPOSED IMPROVED STOVES PROJECT. FOLLOWING WILLEM FLOOR'S MISSION, WE HAVE REVISED PROJECT DOCUMENT TO TAKE ACCOUNT OF GON COMMENTS PARTICULARLY THOSE OF THE COMITE DES FOYERS AMELIORES. THE REVISED PRODOC AND A COVERING LETTER OUTLINING NEXT STEPS IN PROJECT PREPARATION WILL BE SENT TO GON SHORTLY. WE WILL OF COURSE SEND COPIES TO YOU AND UNDP RESIDENT REPRESENTATIVE. FURTHER PREPARATION OF THE PROJECT MUST NOW AWAIT FORMAL AGREEMENT BY GON ON PROJECT SCOPE, COUNTERPART SUPPORT, ETC. ALSO AWAITING FINANCIAL CONTRIBUTION OF EEC AND GTZ WHO HAVE INDICATED INTEREST IN COFINANCING THIS PROJECT UNDER THE ENERGY SECTOR MANAGEMENT ASSISTANCE PROGRAM. THEIR FINAL DECISION IS EXPECTED SHORTLY. (BBB) RE REQUEST TO UNSO FOR STOVE PROJECT. THIS REQUEST DATES BACK TO 1982 AND IS NOW SUPERCEDED BY THE RECENT STOVE WORK IN NIGER AND ELSEWHERE. THE TECHNICAL, ECONOMIC AND LOGISTICAL DIFFICULTIES ASSOCIATED WITH THE PRODUCTION AND DISSEMINATION OF THE TYPE OF STOVES ENVISAGED UNDER THAT PROPOSAL WERE DISCUSSED BY MR. FLOOR WITH MR. SEMERDJIAN AND MR. EJINE OF THE MINISTRY OF MINES AND INDUSTRY. CONSEQUENTLY, OUR UNDERSTANDING IS THAT THE 1982 PROPOSAL TO UNSO IS SUPERCEDED

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BY THE CURRENT STOVE PROJECT PROPOSAL. IF UNSO STILL HAS FUNDS AVAILABLE FOR STOVE WORK, GRATEFUL IF YOU COULD ASCERTAIN THEIR INTEREST IN COFINANCING THIS PROJECT. REGARDS, MASOOD AHMED, DEPUTY CHIEF, ENERGY ASSESSMENTS DIVISION, ■NTBAFRAD.

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SUBJECT: ESMAP - Niger

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DEPARTMENT: Energy

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MR. OLIVIER LE GRAND, PARIS, FRANCE. REFERENCE YOUR TELEX OF APRIL 24. WE HAVE REVIEWED YOUR APPLICATION AND WHILE YOUR BACKGROUND IS INTERESTING TO US WE REGRET THAT THE ENERGY ASSESSMENTS DIVISION CANNOT MAKE YOU AN IMMEDIATE OFFER. WE WILL KEEP YOUR RESUME ON OUR FILES AND CIRCULATE IT TO OTHER DIVISIONS IN THE BANK WHO MAY BE INTERESTED IN IT AND PERSONNEL DEPARTMENT WILL LET YOU KNOW IF ANYTHING SUITABLE MATERIALIZES. (BBB) IT WAS NICE MEETING YOU AND HOPE YOU WILL STAY IN TOUCH. REGARDS, MASOOD AHMED, DEPUTY CHIEF, ENERGY ASSESSMENTS DIVISION, WORLD BANK.

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cc & cleared with Mr. Bharier (EGYEA) and Ms. Imhoof (PMD)

AUTHORIZED BY (Name and Signature): Masood Ahmed, Deputy Chief, EGYEA

DEPARTMENT: Energy

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WORLD BANK OUTGOING MESSAGE FORM — Cable, Telex

PAGE 1 OF 3 | OFFICIAL DISPATCH ABBREVIATION: EGYEA | MESSAGE NUMBER | TEST NUMBER (FOR CASHIER'S USE ONLY)

START 2 HERE

THE MANAGER, HOTEL ATLANTIC, BANJUL, GAMBIA. FOR YOUR GUEST AMARQUAYE ARMAR. MANY THANKS FOR YOUR TELEX OF APRIL 14. RE YOUR MISSION TO ZIMBABWE. NO RESPONSE YET FROM GOVERNMENT. WE WILL FOLLOW UP AND LET YOU KNOW BY MAY 3RD WHETHER TO PROCEED TO ZIMBABWE OR DIRECTLY TO GABORENE. (BBB) RE BOTSWANA GREEN COVER DISCUSSIONS. I PLAN TO ARRIVE IN GABORENE ON MAY 14 FROM INDONESIA BUT IT IS POSSIBLE THAT INDONESIA MISSION WILL BE EXTENDED AND I MAY NOT BE ABLE TO JOIN YOU IN BOTSWANA. WILL LET YOU KNOW DIRECTLY FROM DJAKARTA. (CCC) ALSO RE BOTSWANA MISSION. PLEASE NOTE THAT WHITE COVER VERSION OF ASSESSMENT REPORT WAS "LEAKED" TO A GERMAN CONSULTING FIRM AT GREAT ANNOYANCE TO GOVERNMENT. FOLLOWING CABLE HAS BEEN SENT QUOTE HON. MR. M. C. TIBONE, PERMANENT SECRETARY, MINISTRY OF MINERAL RESOURCES AND WATER AFFAIRS, GABORENE, BOTSWANA. THANK YOU FOR YOUR LETTER OF MARCH 22, 1984 WHICH WE HAVE JUST RECEIVED. WE ARE CONCERNED AS YOU ARE THAT WHAT APPEARS TO BE A VERY EARLY AND ROUGH INTERNAL DRAFT OF THE BOTSWANA ENERGY ASSESSMENT REPORT WAS SOMEHOW "LEAKED" DESPITE THE FACT THAT THE WORLD BANK CONSIDERS SUCH DRAFTS AS CONFIDENTIAL. IT IS AGAINST OUR POLICY AND INTERNAL RULES TO PROVIDE ANYONE OUTSIDE THE WORLD BANK WITH A COPY OF A DRAFT

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REPORT OF THIS NATURE UNTIL IT HAS BEEN REVIEWED BY, AND DISCUSSED WITH, THE GOVERNMENT OF THE COUNTRY CONCERNED.

THE WORLD BANK HAS NOT, TO OUR KNOWLEDGE, EVER HAD ANY DEALINGS WITH REWICO OF HAMBURG. THIS COMPANY IS NOT REGISTERED WITH THE BANK NOR HAS IT CARRIED OUT ANY WORK FOR THE BANK. I CAN ASSURE YOU THAT THE BANK HAS NOT PREPARED ANY REPORT FOR REWICO EITHER ON THE ENERGY SECTOR OR ON OTHER SUBJECTS. THROUGH THE OFFICES OF THE EXECUTIVE DIRECTOR OF GERMANY WE TRACED THE COMPANY AND HAVE SPOKEN WITH THE PRESIDENT, MR. ROLF WINTERBURG, AND THE DIRECTOR, DR. KRAFFT. THEY HAVE PROMISED TO TRY TO DETERMINE HOW THE DRAFT REPORT REACHED THEIR OFFICE AND ONCE WE KNOW THIS WE SHALL TAKE THE APPROPRIATE ACTION.

BY NOW, YOU SHOULD HAVE RECEIVED COPIES OF THE ENERGY ASSESSMENT REPORT, DATED MARCH 1984. THESE WERE AIRFREIGHTED TO GABORENE UNDER COVER OF A LETTER DATED APRIL 4, 1984 FROM MR. ALUN MORRIS. AS MENTIONED IN THAT LETTER WE PROPOSE TO SEND A MISSION TO GABORENE DURING THE WEEK OF MAY 15, 1984 TO DISCUSS THE REPORT WITH YOU AND YOUR COLLEAGUES AS WELL AS THE POTENTIAL FOLLOW-UP TECHNICAL ASSISTANCE AND INVESTMENT PROJECTS RECOMMENDED BY THE REPORT. I HOPE THAT THE TIMING WILL BE CONVENIENT FOR YOU.

END OF TEXT

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ONCE AGAIN, I WOULD LIKE TO EXPRESS MY CONCERN OVER THE "LEAK" OF THE DRAFT BUT TRUST THAT THIS WILL NOT COMPROMISE THE FULL AND FRANK DISCUSSION OF THE REPORT IN GABORENE.

YVES ROVANI, DIRECTOR, ENERGY DEPARTMENT, WORLD BANK. UNQUOTE.

REGARDS, MASOOD AHMED, ENERGY ASSESSMENTS DIVISION, WORLD BANK.

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CLASS OF SERVICE: TELEX TELEX NO.: 2250 HOTALTC GV DATE: April 19, 1984

SUBJECT: ESMAP

DRAFTED BY: MAhmed:aaf. EXTENSION:

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AUTHORIZED BY (Name and Signature): Masood Ahmed, Deputy Chief, EGYEA

DEPARTMENT: Energy

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Joslin —
Re our discussion.
Masood
4/18

Mrs. Joslin Landell-Mills

Joslin -

Re: Article on the Bank's Energy Program

Attached is a copy of the revised draft of the above article. This draft has been reviewed and cleared in the Department and incorporates your comments on the earlier draft. Once you have reviewed this and transferred it to the F&D format, I will send a copy to IPA for their clearance.

Please call me if you have any questions.

Thanks.

Masood Ahmed

April 13, 1984

THE WORLD BANK'S ENERGY PROGRAM:
What the Bank Does and Why

by

MASOOD AHMED

THE WORLD BANK'S ENERGY PROGRAM:
What the Bank does and why

by

MASOOD AHMED

The Bank has accorded a high priority to energy in its overall program because the high cost of energy continues to be a major concern for most developing countries and because the adjustment to higher energy costs is far from complete in these countries. As a group, the oil importing developing countries still spend a fifth of their export earnings on importing oil, and some -- such as Turkey or Bangladesh -- spend much more. Despite the major shifts in pricing structures, investment programs and economic policies that have already been accomplished in many countries, much remains to be done to ensure that energy is used efficiently and to develop and utilize cheaper alternatives to imported oil.

This task remains urgent despite the recent drop in international oil prices as most investments in increasing indigenous energy production and improving the efficiency of energy use in the developing countries will generate high economic rates of return even at a substantially lower oil price. The main constraints are the massive financing requirements for these investments (estimated at about $130

billion per year in a recent Bank report, The Energy Transition in Developing Countries, 1/); and the need to strengthen energy sector management capability in the developing countries to permit the implementation of a larger and more diversified energy investment program. The Bank has a significant contribution to make in assisting developing countries to overcome these resource and managerial constraints. In addition to its own lending, the Bank plays an important catalytic role in mobilizing both local resources within the country, and external funds through cofinancing and by encouraging direct private investment in energy development. Equally important, it assists developing countries through policy advice, institutional strengthening, technology transfer and improved project selection, design and implementation.

The Bank's Program

In response to the developing countries' changing priorities, the Bank has greatly expanded and diversified its energy program. In the fiscal year ending June 30, 1983 (FY83), the World Bank lent $2.97 billion (including both IBRD loans and IDA credits). for forty energy projects in 29 countries (Table 1). This level of lending -- 20% of the Bank's total lending that year — was double the $1.4 billion lent in FY79 and supported a much more diversified range of energy projects. The growth of the Bank's energy lending has been paralleled by its growing involvement in providing advice and technical assistance on energy issues to its member countries: under the joint UNDP/World Bank Energy

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1/ The main conclusions of this study were summarized in an article of the same title, published in the December 1983 issue of Finance and Development.

Assessment Program, started in November 1980, energy assessment reports have been prepared for 29 countries. More recently, an Energy Sector Management Assistance Program has been started, also with UNDP, to assist countries in implementing the policy and investment recommendations of the energy assessment reports. Supporting this growth and diversification has been a large increase in the number of Bank staff working on energy: currently about 300 higher level staff work exclusively on energy issues and many more devote part of their efforts to this sector.

Clearly, energy has become a major priority of the World Bank and -- along with agriculture and the focus on sub-Saharan Africa -- it is expected to remain a major area of emphasis for the remainder of the 1980's. This article reviews the scope and rationale of the Bank's energy program, and the lessons that have been learned from recent experience. It also identifies those areas and issues which are expected to receive particular attention in the future evolution of the program.

OK.

Resource Mobilization

The Bank is the single most important source of external capital for energy development in the developing countries, but Bank finance still accounts for only a fraction of the funds required for energy sector investments in these countries. Consequently, a major feature of the Bank's work in this sector has been to mobilize additional external finance from official and private sources for energy projects in the developing countries. Between FY79-83, the Bank's energy lending of $12.9 billion has been associated with another $12 billion of cofinancing from external sources. To further stimulate the interest of co-lenders, the Bank has recently introduced a trial program of new cofinancing

instruments (called "B" loans) under which the World Bank participates directly or accepts a contingency commitment in a commercially syndicated loan. The first "B" loan for the energy sector was approved recently to help finance an industrial energy diversification project in Hungary. In addition to the cofinancing directly associated with Bank projects, the Bank has sought to increase the level of direct private investment in LDC energy development, particularly in the petroleum sector, through a variety of specific instruments and through a general dialogue with national policy makers on the legislative, contractual, administrative and pricing framework governing these investments (see also the section on exploration promotion projects).

Along with its financial involvement, the Bank has made a major effort to assist its member countries in strengthening their management of the energy sector. ~~This emphasis reflects the enormous management burden posed by the increasing complexity of~~ decision-making in the energy sector ~~has~~ has become much more complex because the policy and ~~The need to evaluate diverse and complex energy options,~~ investment options are diverse & interlinked, sector investment programs ~~to develop associated sector investment programs, to finance large volume~~ and resource requirements are much longer, and the potential sources of financing ~~of investment finance from a variety of sources, and to conduct an~~ are more numerous. ~~effective technical and policy dialogue with potential investors, all require a much stronger national capability for energy sector management.~~ To assist in these efforts, the Bank has sought to build on its traditional strengths in the areas of project selection and implementation, strengthening of institutions and the management capacity for the sector, and the analysis and resolution of key sector issues ~~and assistance in formulating a strategy for their resolution.~~ Project selection is thus based on a review of sector objectives, priorities and investment

options. Ensuring that the project's design represents the least-cost solution frequently involves an analysis of alternative development options for the energy supply system as a whole, because of strong interlinkages and complementarities that exist among individual projects. Special efforts are also made to ensure that the project design will help transfer new technology to the borrower, which can be applied to benefit the sector as a whole. Equally important is the design of project implementation arrangements which will create a team of managers to maintain, operate and expand the facilities provided under the project.

The Bank's approach to project financing also ensures that there is a continuing interaction between project specific issues on the one hand and overall sector policies and priorities on the other. At project appraisal and negotiation, overall sector issues are often discussed in detail and agreements reached on specific programs for their resolution. The range of issues addressed through this dialogue can include the formulation of subsector development strategies, demand management and pricing, institutional reform, resource utilization and the respective roles of public and private agencies in the development of the sector.

The Bank's participation in specific energy projects is only one vehicle for the analysis of energy sector issues and the ensuing dialogue with national policy makers. An equally important and complementary mechanism is ~~nonproject assistance in the form of an~~ the increasing volume of ~~direct~~ non-project assistance provided through sector studies and support for preinvestment work. The largest component of this work is the joint

UNDP/World Bank Energy Assessments Program which is designed to help individual developing countries formulate a strategy for addressing their principal energy issues. Energy assessment reports have been completed or are under preparation in 48 countries and an additional 22 countries are expected to be covered by December 1985, when the program is scheduled to end. The assessments analyze the scope for changes in pricing, institutional arrangements and other policies to encourage domestic energy production and the more efficient use of energy. The reports are prepared by inhouse staff and experts brought together for this specific purpose, with the close collaboration of host government officials and the staff of the major energy agencies in the country. An unusual feature of the assessments is that the final reports are circulated to all the major donor agencies and can therefore be used as an important tool for aid coordination and as a framework for multilateral and bilateral assistance to the energy sector. For example, they have been used at meetings of Consultative Groups (Uganda, Sudan, Nepal, Bangladesh, Indonesia) and the UNDP-sponsored Round Tables (Burundi). More important is the fact that the governments concerned have found these reports to be useful and are making extensive use of the advice provided by the assessments.

A related program, the Energy Sector Management Assistance Program (ESMAP) was started with the UNDP in April 1983 to help countries implement the main recommendations of the Assessment Reports. The Program provides staff and consultant assistance to define and justify the policy, investment and technical assistance options identified by the assessments so that national policy makers, private investors and

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focus of the ESMAP is on studies which carry out the feasibility & costing of priority projects, a detailed action plan for their preparation / implementation. Examples include the definition of a tobacco industry egg efficiency improvement project in Malawi, a solar water heating project for hotels in the Gambia, and power system efficiency improvement projects in a number of countries.

INSERT attached

official assistance agencies can act more rapidly to implement them. A good example of ESMAP involvement in project preparation is the work carried out on improving the efficiency of wood energy use in the tobacco curing industry in Malawi. The Energy Assessment Report for Malawi had identified this a priority because the tobacco industry accounted for approximately forty percent of the nation's fuelwood use and there was considerable evidence to suggest that the industry's fuelwood requirements could be substantially reduced through low cost investments to improve the energy efficiency of traditional tobacco barns. The Government needed assistance in defining the technical and economic aspects of a program to effect these improvements, so the ESMAP carried out a prefeasibility study which identified and evaluated the various technical packages that could be used to improve the energy efficiency of tobacco curing and defined a $0.4 million pilot project to install the most profitable of these improvements in a number of the barns. This pilot project is now being implemented with financial assistance from an IDA credit and should be followed by a nationwide program to improve the energy efficiency of the tobacco industry, thereby helping to conserve ~~Malawi's most important energy resource.~~

→ run on to previous paragraph.

In addition to project preparation, the ESMAP can also assist in the analysis of institutional and policy options and the definition of technical assistance requirements for establishing an effective energy sector management capability. As with the Energy Assessments Program, ESMAP reports are also circulated to all interested donors and can be used as a basis for programming their assistance efforts. In the first year of the ESMAP program, about 40 specific activities had been

completed or were underway in 18 countries. The initial impact of this work has been extremely encouraging, particularly in the area of project generation where nearly all the projects formulated and justified by the ESMAP reports so far have been, or are being, taken up by donor agencies.

Finally, in addition to its sector analysis, technical assistance and project financing the Bank's Structural Adjustment Lending also frequently provides the mechanism for discussing and resolving important energy sector issues. Most of the ..... Structural Adjustment Loans approved in FY83 include some emphasis on the restructuring of energy policy and programs. This emphasis is expected to continue because, for many developing countries, changes in energy supply and demand patterns will be an integral feature of their overall adjustment efforts.

Thus, the Bank uses a variety of instruments to assist developing countries in formulating and implementing an effective energy sector strategy. A distinguishing feature of the Bank's involvement is an emphasis on ensuring that all these elements are part of an integrated strategy and a long term commitment to improving the energy prospects of the developing countries. This approach is reflected in the mix of activities executed in specific countries. It also determines the focus of the Bank's work in each of the energy subsectors, the principal features of which are discussed in the following sections.

Subsector priorities

Despite the recent diversification in the Bank's energy program, electric power remains the largest component, accounting for 60% of the total energy lending in FY83. This is partly a reflection of the

continuing high requirements for electric power investments in the developing countries -- approximately $60 billion per year -- as well as the fact that these investments have to be implemented almost exclusively by the public sector. However, although electric power projects are the most established form of Bank lending, their selection and design have been fundamentally affected by the rise in oil prices. The analysis of power generation projects has become more complex because alternatives are more numerous and because their implementation often has to be closely coordinated with primary energy development projects in other subsectors. ~~A good example is the Twelfth Power Project for Indonesia supported by a $300 million Bank loan. The generating capacity being added through this project will make use of indigenous coal and geothermal resources which are themselves being developed through other projects.~~

An important lesson which has emerged from the Bank's recent power sector experience is the need to ~~focus on~~ improving the efficiency of existing plant and operations which can often ~~help to~~ delay expensive investments in new capacity. ~~Under the Energy Sector Management Assistance Program~~, ESMAP audits of existing generating plant ~~have been~~ carried out under the ESMAP in ~~a number of countries including~~ Kenya, Sri Lanka and Sudan, ~~and~~ have identified relatively low cost measures which will improve plant operating efficiency and reliability as well as adding to available capacity. Similarly, excessive losses in transmission and distribution, frequently due to a neglect of this area because of the pressure to use available resources to add new generating capacity, can also be reduced quickly and cheaply through the rehabilitation and redesign of existing

facilities. Five of the 15 power projects in FY83 were primarily aimed at improving transmission and distribution facilities and the focus on this area is expected to grow.

The Bank's oil and gas program has expanded particularly rapidly since the first loan in 1977 for the development of the Bombay High Oil field in India. In FY83, oil and gas lending reached nearly $1 billion for 17 projects covering both predevelopment and development activities. This program has three objectives. First to help develop realistic and appropriate national petroleum sector strategies which will maximize the contributions from all sources -- private and official, equity and debt. Second, to help countries prepare and promote prospective acreage to domestic and international oil companies so as to increase the level of private sector activity in the country. And third, to help the government finance and implement effectively its own program of petroleum exploration and development wherever this is part of the appropriate development strategy for the country. For most of the countries covered by the Bank's oil and gas program, attracting outside private financing is an urgent requirement and the Bank's exploration promotion projects respond most directly to this need. Twenty-six exploration promotion projects had been approved by the end of FY83. These projects make available better data on geological prospectivity for private investment and assist in developing investment terms and conditions which provide a fair balance between the interests of the country and the investor. The involvement in Guinea Bissau provides a good example. International oil companies had explored there unsuccessfully and abandoned all acreage. To stimulate new interest, in

FY81 the Bank financed a new limited offshore seismic program. The data produced were integrated with previously acquired data and the package was then made available to industry along with an invitation to submit exploration investment proposals. By the end of 1983, new exploration agreements had been signed with six companies. A follow up FY83 project will help the country acquire and package additional geological information on prospective areas. Exploration promotion projects have reached the negotiation stage in 13 countries, with 20 exploration agreements signed and another 11 at an advanced stage of preparation.

During FY83, the Bank also supported the exploration and/or appraisal activities of national oil companies in five countries. The basic rationale for this type of Bank lending is that in a number of cases, the priority attached to exploring a particular field by the international oil industry -- which has to make worldwide choices in allocating its limited technical, managerial and financial resources -- may differ markedly from the perspective of a host country which has more limited options. This difference is exacerbated when the area has prospects for natural gas rather than oil, because of the much more limited export prospects for the former. Of the five FY83 exploration projects, two (Turkey and Morocco) focussed on natural gas, one (Philippines) on geothermal energy, one (India) for both oil and gas, and one (Madagascar) on defining the prospects for the development of a heavy oil deposit.

Natural gas accounts for a growing share of the Bank's petroleum development projects - $265 million or 43% of petroleum development lending in FY83. The increasing focus on gas reflects the Bank's recent

experience, which has shown that the potential contribution of natural gas to meeting the energy requirements of the developing countries had been generally underestimated and that the international oil companies do not have the same interest in gas production for the domestic market as they have for oil. Recent country studies have estimated that the costs of gas development are lower and the potential domestic demand is higher and more diverse than previously believed. As a result the demand for natural gas in the LDC's is expected to grow rapidly in the next decade and in some large countries -- such as Nigeria and Bangladesh -- gas is likely to supply a high share of the incremental commercial energy demand over this period. However, the assessment of gas reserves and markets is at a relatively early stage in most developing countries and many of them require assistance in formulating an integrated gas development strategy and in defining better contractual, legal and financial arrangements for gas production, transmission and use. The Bank's efforts in this sector are geared to provide this assistance as well as to help finance the large investment costs for gas production and the associated infrastructure.

In the refinery subsector, the changing pattern of petroleum product demand in the developing countries has rendered many existing refineries unsuitable and resulted in an imbalance, which is characterized by a growing shortage of diesel fuels and a surplus of heavy fuel oil and, frequently, gasoline as well. To tackle this problem developing countries need to act on a variety of areas ranging from relative fuel pricing and utilization policies to investments in secondary processing facilities to convert fuel oil into middle

distillates. In addition there is an acute need to rehabilitate and improve the energy efficiency of existing refineries, many of which are over fifteen years old and were designed to minimize capital costs and operate at energy efficiency levels that are no longer optimal. Thus while the Bank has not participated in financing grass-root refineries, it does assist in this area by helping developing countries formulate appropriate refinery subsector strategies, evaluating the technical and economic merits of alternative conversion schemes, and financing secondary conversion and refinery efficiency improvement projects. By the end of FY83, refinery sector reviews had been undertaken in 32 countries and followed up by eight projects financing either the installation of secondary conversion and energy efficiency facilities (Argentina, Bangladesh, India, Portugal) or engineering and technical studies to determine the most economic source of liquid fuels for the country and to help evaluate the economic and technical viability of proposed investments (Pakistan, Peru, Zambia and Zimbabwe).

The Bank's involvement in the coal subsector is relatively recent with FY83 accounting for three of the eight projects that had been approved till then. Their principal focus is to help developing countries overcome the recurrent constraints of the absence of a coherent coal development strategy, the limited availability of good geological data, poor coordination between coal production, infrastructure and utilization projects and an institutional framework which is characterized by a range of bureaucratic obstacles. These constraints have raised the cost of domestic coal production in many developing countries and are retarding the increased use of this resource to

substitute for more expensive oil. To help developing countries identify and overcome these constraints the Bank carried out coal/lignite subsector studies in 27 countries over FY78-83 and has followed up with specific projects to address the principal issues identified by this work. The FY83 project in Zambia provides an example. This project, which followed a coal subsector review carried out as part of the energy assessment, will finance a detailed feasibility study to rehabilitate the Maamba Colliery which is currently operating at only one-half of the design capacity. The project will also finance procurement of initial spare parts needed to keep the mining complex operating during the study period and to improve plant performance and the quality of the coal produced by the colliery.

The urgency and importance of action to tackle the growing fuelwood crisis in most developing countries is now widely recognized. However few countries have the infrastructure and institutional capability to support large scale fuelwood planting and the principal lesson that has emerged from recent experience in this area is that a considerable amount of groundwork must normally be done over several years before large scale planting programs can be effectively implemented. The Bank's own lending for fuelwood projects has therefore grown more slowly than anticipated, amounting over FY79-83, to about $360 million for both freestanding fuelwood projects and for fuelwood components in agricultural or other forestry projects. In addition to financing plantations, nurseries and associated infrastructure, these projects have had a heavy emphasis on technical assistance and institutional strengthening. Many of them include village level and

national demand surveys; land use studies; research into fast growing tree species, agroforestry crop combinations and allied forestry research problems; introduction of more efficient wood burning stoves and charcoal kilns; and support for strengthening forestry sector institutions. An example is provided by the FY83 Jammu-Kashmir/Haryana Social Forestry Project in India which is assisted by a $33 million IDA credit. In addition to the financing of over 100,000 hectares of various types of plantations in the two states, the project provides for an extensive program of training for forestry sector staff and a series of technical and socio-economic studies to evaluate the effectiveness of alternative wood production, collection handling and storage techniques, to determine farmer preferences for different species, and to obtain reliable information on the consumption and availability of fuelwood and other forest-based products in both rural and urban areas.

The Bank also has a small but growing involvement in supporting the commercialization and development of other non-conventional renewable energy applications, some of which are particularly well suited to meeting the energy needs of the developing countries. Here the Bank's activities include the financing of biomass alcohol projects (Brazil); the inclusion of renewable energy technologies in Bank projects to obtain operating experience and determine the most economic systems and applications (minihydro in Sri Lanka, solar and wind energy in Cyprus); and institution building assistance to develop local capacity for utilizing renewable energy (Portugal, Cyprus). The Bank has also undertaken a systematic review of the technical and economic status of

several technologies; the results of the work on biomass gasification and solar pumping have already been published.

While the bulk of the Bank's energy lending has been for supply development projects since 1979, there has been an increasing emphasis on efficient energy utilization through direct support for energy efficiency improvement projects. These projects complement the emphasis on energy pricing and demand management in the Bank's policy advice and are often identified through the analysis of the energy assessments and other sector studies. Most of the energy efficiency improvement projects to date have focussed on the industrial sector which is generally the largest user of energy and where there is a wealth of comparable recent experience in the industrialized countries. These projects normally include the provision of considerable technical assistance for energy audits and institutional strengthening as well as financial support for major investments in retrofitting existing plant and processes. A good example is the $309 million FY83 Energy Diversification and Conservation Project in Hungary which will fund major fuel substitution programs (domestic coal and natural gas for oil and imported coking coal) as well as 62 small industrial energy saving projects.

Conclusion

Active involvement by the Bank in energy continues to be essential because of the priority the energy sector has in the developing countries, the urgency of adjusting sector strategies and by the very large volume of financing required by this sector in all countries. Bank financing plays an important catalytic role by attracting other investors and lenders to participate in high priority, economically sound and

financially attractive projects in all energy subsectors. This resource mobilization function is particularly important because the Bank's own energy lending cannot exceed a quarter of its total lending without displacing priority projects in other sectors and will therefore continue to account for only about five percent of the energy investment requirements in the developing countries.

Nonetheless, within these constraints the Bank will continue with a diverse program of energy activities in response to the developing countries' needs. Through project financing, technical assistance and sector assessments, the Bank will endeavor to maintain its dialogue with member countries on sectoral policy issues, and to provide assistance for sector management, institutional strengthening, and implementation of rational programs of energy sector investments. The subsectoral composition of the Bank's energy lending and the content of its technical assistance activities will depend on the needs and priorities of individual countries, taking into account the availability of technical advice and financing from other sources, and the potential contribution the Bank can make not only in mobilizing financial resources but in a wide range of other dimensions.

Table 1

World Bank Energy Lending 1979-83

	1979		1980		1981		1982		1983		Totals 1979-83		Percent 1979-83	
	No. of projects	Millions of dollars	No. of projects	Millions of dollars	No. of projects	Millions of dollars	No. of projects	Millions of dollars	No. of projects	Millions of dollars	No. of projects	Millions of dollars	No. of projects	Millions of dollars
Power	18	1,355	24	2,392	17	1,323	21	2,131	15	1,758	95	8,959	54	70
Coal	-	-	1	72	1	10	3	227	3	18	8	327	5	2
Oil and Gas	4	112	13	385	12	650	14	539	17	1,038	62	2,724	34	21
of which:														
Exploration promotion	-	-	5	36	6	33	8	36	7	84	26	188	15	1
Exploration	-	-	3	96	3	70	1	20	5	344	12	530	7	4
Oil development	1	3	2	60	2	462	3	303	3	345	11	1,172	6	9
Gas development	3	110	3	194	1	85	2	180	2	265	11	834	6	7
Energy-related industry	-	-	-	-	1	250	6	460	5	161	12	871	7	7
TOTAL	22	1,467	38	2,849	31	2,233	44	3,357	40	2,975	175	12,881	100	100
Energy as % of total Bank lending	-	15		25		19		26		21		21		

Note: In addition to lending for commercial energy development, fuelwood lending amounted to about US$360 million during 1979-83.

THE WORLD BANK/INTERNATIONAL FINANCE CORPORATION

OFFICE MEMORANDUM

To: EGYEA Staff April 18, 1984

From: Masood Ahmed, Deputy Chief, EGYEA

Subject: Coordination with East Africa

1. The attached memo from Hal Wackman records a number of measures agreed upon to improve the coordination of energy sector work in East Africa. Please note that we have agreed that all terms of reference, draft reports and non-routine communications to the countries on ESMAP activities in East Africa will be cleared by EAPEG before they are finalized. To facilitate this, EAPEG has designated a contact person for each country to whom we should send all documents for comments/clearance and who will coordinate internal comments and clearance within EAPEG. A current list of contact persons is attached to the memo. These staff members will also serve as the contact point for assessment work and should routinely receive copies of the reports/communications for their countries. I will be happy to respond to any questions or comments you might have on the memo.

Attachments.

cc and cleared with Mr. Bharier (EGYEA)

cc: Messrs. Rao, Bates (EGY); Wackman (EAPEG)

MAhmed:aaf.

THE WORLD BANK/INTERNATIONAL FINANCE CORPORATION

OFFICE MEMORANDUM

DATE April 16, 1984

TO Mr. Jose A. Bronfman, Assistant Director, EAPDR

FROM Harold B. Wackman, Chief, EAPEG

EXTENSION 74518

SUBJECT EAN Energy Sector Work

The latest situation regarding the energy assessment program in EAN was reviewed at a meeting held on March 27th, 1984. The review was continued at a meeting on April 3, 1984 to deal with the Energy Sector Management Assistance Program (ESMAP) in EAN. Notice of this review was sent out in my memorandum of March 19, 1984 to which was attached extracts of EGYEA's quarterly Status Reports (of March 1, 1984) on these programs and the program for Sector Work agreed at the previous review meeting.

Since the meetings were held soon after the publication of EGYEA's Status Reports, there were only a few changes to the situation from that given in these reports. These changes are noted as addenda to the attached extracts of these reports.

We discussed separately with Mr. Masood Ahmed (EGYEA) means of improving coordination of energy assessment, management assistance and other sector work (including energy strategy papers) between EAN and EGYEA, and we are proposing to implement the following measures:

- review meetings will be held quarterly immediately after publication of EGYEA's quarterly Status Reports;
- these Status Reports will form the basis for recording progress and will supercede the reporting format EAPEG has used;
- EAPEG will issue a quarterly report of sector work in EAN managed by EGYEG and this will be discussed at the same time;
- EGYEA will issue the summary chart (Part II of the Report) on the ESMAP with activities grouped according to region; this chart identifies the EGYEA staff member responsible for each ESMAP activity;
- EAPEG are nominating staff members from the division to act as point of contact for a particular country on coordinating sector and ESMAP work with EGYEA. The list of nominations is attached; and
- Mr. Ahmed will ensure that all terms of reference, draft reports and non-routine communications to the countries on ESMAP activities will be cleared by EAPEG before they are finalized.

To ensure comprehensive coordination of energy sector work in EAN, it would be necessary to incorporate the relevant activities of INDD1, INDD2 and EGYPPD2 into the reporting procedures. Accordingly, we agreed to propose to these divisions that they produce quarterly summaries of these activities at the same time as the EGYEA Status Reports.

A list of Energy Strategy Papers, the first of which we are just starting and which generally involve some EGY support, is also attached.

Attachments

Cleared with and cc: Mr. Masood Ahmed (EGYEA)

Distribution:

Messrs. Gulhati (EANVP), Rao (EGYEC), Bharier (EGYEA), Bates (EGYEA), Ahmed (EGYEA), Greene (EA1), Armstrong (EA2), Payson (EA2), Gusten (EAPDR), Iskander (EGYD2), Bauer (EGYD2), Ms. Haug (INDD1), Segura (INDD2)

cc: Messrs. Wyss Kraske, Gue, Ducker, Rovani (EGY), Dunn, Messenger, Schott, Elmendorf, de Capitani, Newcombe
EAPEG Staff

JEBesant-Jones:cuc

ENERGY ASSESSMENTS

STATUS REPORT AND WORK PROGRAM FOR EAST AFRICA

COUNTRY	PRINCIPAL STAFF INVOLVED EGYEA	PROJECTS	PROGRAMS	STAGE COMPLETED	FY84 MAR	APR	MAY	JUN	FY85 JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	COMMENTS OR MAJOR CHANGES SINCE LAST REPORT
BOTSWANA	*Armar Mian	Dyson	Morris	(6)	7,8	9	10										
COMOROS	*Schaedtje			(0)							1,2	3	4	5		6	
ETHIOPIA	*Wackman Newcombe Beroumand	Killoran Besant-Jones	Codippily	(9)			10										
MADAGASCAR	*Schaedtje Russell (Cons)	Grut	Stephenson McGibbon	(0)	1	2	3		4	5		6	7	8	9	10	
MOZAMBIQUE	*Liebenthal			(0)											1	2	Mission subject to confirmation of Government interest.
SOMALIA	*Richter	Postvedt	Sharma	(1)					2	3	4	5		6	7	8	
SWAZILAND	*Schaedtje			(0)							1,2	3	4	5		6	Special funds received under small country program.
TANZANIA	*Bates Kiwana	Poncia Schramm	Anderson	(6)	7,8	9	10										
ZAIRE	*Ferroukhi			(0)									1	2	3	4	Mission timing subject to discussions with Region and Government commitment.

COUNTRY	COMPLETED ASSESSMENTS
BURUNDI	Blue Cover 6/82.
KENYA	Blue Cover 5/82.
LESOTHO	Blue Cover 2/84.
MALAWI	Blue Cover 8/82.
MAURITIUS	Blue Cover 12/81.
RWANDA	Blue Cover 8/82.
SEYCHELLES	Blue Cover 2/84.
SUDAN	Blue Cover 7/83.
UGANDA	Blue Cover 7/83.
ZAMBIA	Blue Cover 1/83.
ZIMBABWE	Blue Cover 6/82.

OTHER COUNTRIES	
DJIBOUTI	To be carried out in FY85 but staffing and timing to be determined in conjunction with another operation to minimize cost.

* Mission Leader

Assessment Report Stages

1. Desk Study
2. Reconnaissance
3. Pre Mission Issues Paper
4. Mission
5. Post Mission Issues Paper
6. White Cover
7. Yellow Cover
8. Green Cover
9. Discussion with Government
10. Blue or Grey Cover

March 1, 1984

Energy Assessment Work Program for East Africa

Updating of the schedule given in the quarterly Status Report of March 1st, 1984 notified at the meeting on March 27th, 1984.

COMOROS: Reconnaissance mission put back to Spring, 1985 from September, 1984 due to inclusion of only 50% of required staff weeks in FY85 by EAN.

MOZAMBIQUE: Possibility of Bank taking initiative in arrangements for an assessment following telex from UN Res. Rep. EAPEG will raise this matter within Region.

SOMALIA: Program is tentative and depends upon progress in overall Somalia/Bank relations.

SWAZILAND: Member of EGYEA (Schmedtje) will call into Swaziland on the way back from Madagascar reconnaissance mission to review situation. EGYEA is still awaiting Government confirmation.

ZAIRE: EGYEA is proposing to advance program by four months with reconnaissance mission in August, 1984.

EAST AFRICA REGION

Part II Ongoing and Planned Activities

ENERGY SECTOR MANAGEMENT ASSISTANCE PROGRAM

Status Report as of March 1, 1984 and Work Program to May 31, 1984

Country	Activity	Principal Staff	Stage Completed	Mar.	Apr.	May.	Comments
Burundi	Negotiations with Oil Companies	Fostvedt	(6)	7	8	9	Part of programmed assistance may not be required because of UN offer for similar work.
Burundi	Assistance for Energy Round Table	King/Petcu	(6)	7	8	9	
Ethiopia	Power Efficiency Audit	Gulstone/Banks	(3)	4,5	6		
Kenya	Energy Assessment Status Report	Newcombe	(8)	9			Awaiting Government clearance of draft report.
Kenya	Solar Water Heating	Newcombe	(3)				Because of ongoing CIDA project only limited advisory support from ESMP will now be required.
Kenya	Power Sector Efficiency Audit	Newcombe/Mitchell	(8)	9			Report has identified $11 million rehabilitation package.
Malawi	Institutional Review of Energy Sector	Ansari	(8)				Report circulation delayed pending clarification of changes in institutional arrangements. Review mission scheduled for June, 1984.
Rwanda	Energy Assessment Status Report	King	(8)	9			Report has been discussed and cleared by Government and has identified a number of priority areas for follow up.
Seychelles	Power Efficiency Audit	Mitchell/Mian	(5)	6		7	
Sudan	Power Sector Efficiency Audit	Alahdad	(8)		9		Mission scheduled for March to discuss report with Government.
Uganda	Petroleum Import Arrangements	Alahdad/Ogmen	(7)	8			March mission will discuss report with Government.
Uganda	Energy Sector Assistance	Alahdad	(3)				March mission will define scope of ESMAP assistance.
Zambia	Energy Assessment Status Report	Armar	(5)				Mission postponed to June/July on advice of Resident Representative.
Zimbabwe	Energy Assessment Status Report	Armar	(8)		9		Mission scheduled for March to discuss report and follow up with Government.

Stages of ESMAP Activities

1. Identification, definition of assistance
2. Government request received
3. Terms of reference drafted
4. Activity Initiation Report issued
5. Consultant hired, staff identified
6. Mission in field
7. Draft report issued for internal review
8. Draft Report sent for Govt. clearance
9. Report agreed with Govt. and issued in final

March 1, 1984
MAhmed:aaf.

Energy Sector Management Assistance Program (ESMAP) for East Africa

Updating of the schedule given in the quarterly Status Report of March 1st, 1984, notified at the meeting on April 4th, 1984.

BURUNDI Assistance for Energy Round Table - Consultant's report in French on TA has been received and is being translated into English.

KENYA Energy Assessment Status Report has now been finalized and will be distributed for clearance soon.
Power Sector Efficiency Audit report has been completed.

RWANDA Energy Assessment Status Report has been finalized and will be distributed for clearance soon. Non-power components of proposed Energy Project will be candidates for ESMAP.

SUDAN Power Sector Efficiency Audit report has been discussed with Government. Energy Sector Status mission is scheduled for July, 1984.

UGANDA Government has agreed to a program of technical assistance under ESMAP. Energy Assessment Status mission is scheduled for about June - will be coordinated with Power II appraisal mission.

ZAMBIA A visit (possibly by Ahmed or Wackman) will be undertaken in July, 1984 to discuss need and arrangements for an Energy Assessment Status Report and for energy project identification.

ZIMBABWE Armar's visit to discuss Energy Assessment Status Report will now take place during May, 1984.

Energy Strategy Papers
(managed by EAPEG)

Country	Responsible	Completion Date	Total Staffweeks	Of which EAPEG	EGY
Ethiopia	Aguilar/Newcombe	mid FY85	10	6	3
Kenya	Schramm/Shaukat	mid FY85	10	10	0
Uganda	Besant-Jones/Mitchell	mid FY85	9	7	2
Regional Energy Investment and Policy Study	Besant-Jones	end FY85	12	8	4

East Africa Energy Sector Work

EAPEG Staff Country Responsibilities

Country	EAPEG Staff Members Resposible
Angola	Besant-Jones
Botswana	Ceyhan/Besant-Jones
Burundi	Boutan/Schramm
Comoros	Besant-Jones
Djibouti	Besant-Jones
Ethiopia	Aguilar/Schramm (Newcombe after July 1)
Kenya	Schramm/Shaukat
Lesotho	Schramm/Mastilovic
Madagascar	Boutan/Mastilovic (Newcombe after July 1)
Malawi	Schramm/Mastilovic
Mauritius	Shaukat/Ceyhan
Mozambique	Besant-Jones/Chaves
Rwanda	Boutan/Schramm
Seychelles	Besant-Jones
Somalia	Besant-Jones
Sudan	Besant-Jones/Shaukat
Swaziland	Schramm/Mastilovic
Tanzania	Schramm/Mitchell
Uganda	Besant-Jones/Mitchell
Zaire	Ceyhan/Schramm
Zambia	Besant-Jones/Chaves
Zimbabwe	Besant-Jones/Ceyhan

April 16, 1984

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EGYEA

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INTBAFRAD, JAKARTA, INDONESIA. ATTENTION BAIRD AND KHALILZADEH-SHIRAZI. REFERENCE ENERGY ASSESSMENT STATUS MISSION. AS YOU MAY KNOW DR. PRASAD HAS HAD AN ACCIDENT IN VANUATU AND WILL NOT BE ABLE TO HEAD THE ABOVE MISSION CURRENTLY SCHEDULED FOR MAY 7. GIVEN THE DIFFICULTY IN SETTING UP THE MISSION WE DO NOT WANT TO POSTPONE IT FURTHER. CONSEQUENTLY WE PROPOSE THAT MISSION PROCEED ON ORIGINAL TIMING WITH A SENIOR STAFF MEMBER OF THE ENERGY DEPARTMENT REPLACING DR. PRASAD AS MISSION LEADER. WE ARE STILL EXAMINING ALTERNATIVE POSSIBILITIES BUT LIKELY THAT MISSION LEADER WOULD BE ONE OF EITHER D.C. RAO, JULIAN BHARIER OR MYSELF, ACCOMPANIED BY MATTHEW MITCHELL. PLEASE LET ME KNOW YOUR VIEWS ON REVISED STRATEGY. I WILL KEEP YOU POSTED ON DEVELOPMENTS AT THIS END. REGARDS. AHMED, ENERGY, INTBAFRAD

END OF TEXT

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INFORMATION BELOW NOT TO BE TRANSMITTED

CLASS OF SERVICE: TELEX | TELEX NO.: 796-44456 | DATE: 4/17/84

SUBJECT: INDONESIA: ESMAP Msn.

DRAFTED BY: MAhmed:ks | EXTENSION: 7-4545

CLEARANCES AND COPY DISTRIBUTION:

cc: Ms. Hamilton (AEA)

AUTHORIZED BY (Name and Signature): Masood Ahmed, Deputy Chief, EGYEA

DEPARTMENT: ENERGY

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DISTRIBUTION: WHITE—File Copy CANARY—Bill Copy WHITE—Transmittal Copy BLUE—Originator to Keep

1. Use OCR-B210 Sphere and set typewriter for DOUBLE SPACING — No other markings acceptable

Mrs. Joslin Landell-Mills

Joslin -

Re: Article on the Bank's Energy Program

Attached is a copy of the revised draft of the above article. This draft has been reviewed and cleared in the Department and incorporates your comments on the earlier draft. Once you have reviewed this and transferred it to the F&D format, I will send a copy to IPA for their clearance.

Please call me if you have any questions.

Thanks.

Masood Ahmed

April 13, 1984

THE WORLD BANK'S ENERGY PROGRAM:
What the Bank Does and Why

by

MASOOD AHMED

THE WORLD BANK'S ENERGY PROGRAM:
What the Bank does and why

by

MASOOD AHMED

The Bank has accorded a high priority to energy in its overall program because the high cost of energy continues to be a major concern for most developing countries and because the adjustment to higher energy costs is far from complete in these countries. As a group, the oil importing developing countries still spend a fifth of their export earnings on importing oil, and some -- such as Turkey or Bangladesh -- spend much more. Despite the major shifts in pricing structures, investment programs and economic policies that have already been accomplished in many countries, much remains to be done to ensure that energy is used efficiently and to develop and utilize cheaper alternatives to imported oil.

This task remains urgent despite the recent drop in international oil prices as most investments in increasing indigenous energy production and improving the efficiency of energy use in the developing countries will generate high economic rates of return even at a substantially lower oil price. The main constraints are the massive financing requirements for these investments (estimated at about $130

billion per year in a recent Bank report, The Energy Transition in Developing Countries, 1/); and the need to strengthen energy sector management capability in the developing countries to permit the implementation of a larger and more diversified energy investment program. The Bank has a significant contribution to make in assisting developing countries to overcome these resource and managerial constraints. In addition to its own lending, the Bank plays an important catalytic role in mobilizing both local resources within the country, and external funds through cofinancing and by encouraging direct private investment in energy development. Equally important, it assists developing countries through policy advice, institutional strengthening, technology transfer and improved project selection, design and implementation.

The Bank's Program

In response to the developing countries' changing priorities, the Bank has greatly expanded and diversified its energy program. In the fiscal year ending June 30, 1983 (FY83), the World Bank lent $2.97 billion (including both IBRD loans and IDA credits). for forty energy projects in 29 countries (Table 1). This level of lending -- 20% of the Bank's total lending that year -- was double the $1.4 billion lent in FY79 and supported a much more diversified range of energy projects. The growth of the Bank's energy lending has been paralleled by its growing involvement in providing advice and technical assistance on energy issues to its member countries: under the joint UNDP/World Bank Energy

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1/ The main conclusions of this study were summarized in an article of the same title, published in the December 1983 issue of Finance and Development.

Assessment Program, started in November 1980, energy assessment reports have been prepared for 29 countries. More recently, an Energy Sector Management Assistance Program has been started, also with UNDP, to assist countries in implementing the policy and investment recommendations of the energy assessment reports. Supporting this growth and diversification has been a large increase in the number of Bank staff working on energy: currently about 300 higher level staff work exclusively on energy issues and many more devote part of their efforts to this sector.

Clearly, energy has become a major priority of the World Bank and -- along with agriculture and the focus on sub-Saharan Africa -- it is expected to remain a major area of emphasis for the remainder of the 1980's. This article reviews the scope and rationale of the Bank's energy program, and the lessons that have been learned from recent experience. It also identifies those areas and issues which are expected to receive particular attention in the future evolution of the program.

The Bank is the single most important source of external capital for energy development in the developing countries, but Bank finance still accounts for only a fraction of the funds required for energy sector investments in these countries. Consequently, a major feature of the Bank's work in this sector has been to mobilize additional external finance from official and private sources for energy projects in the developing countries. Between FY79-83, the Bank's energy lending of $12.9 billion has been associated with another $12 billion of cofinancing from external sources. To further stimulate the interest of co-lenders, the Bank has recently introduced a trial program of new cofinancing

instruments (called "B" loans) under which the World Bank participates directly or accepts a contingency commitment in a commercially syndicated loan. The first "B" loan for the energy sector was approved recently to help finance an industrial energy diversification project in Hungary. In addition to the cofinancing directly associated with Bank projects, the Bank has sought to increase the level of direct private investment in LDC energy development, particularly in the petroleum sector, through a variety of specific instruments and through a general dialogue with national policy makers on the legislative, contractual, administrative and pricing framework governing these investments (see also the section on exploration promotion projects).

Along with its financial involvement, the Bank has made a major effort to assist its member countries in strengthening their management of the energy sector. This emphasis reflects the enormous management burden posed by the increasing complexity of decision-making in the energy sector. The need to evaluate diverse and complex energy options, to develop associated sector investment programs, to finance large volume of investment finance from a variety of sources, and to conduct an effective technical and policy dialogue with potential investors, all require a much stronger national capability for energy sector management. To assist in these efforts, the Bank has sought to build on its traditional strengths in the areas of project selection and implementation, strengthening of institutions and the management capacity for the sector, and the analysis of key sector issues and assistance in formulating a strategy for their resolution. Project selection is thus based on a review of sector objectives, priorities and investment

options. Ensuring that the project's design represents the least-cost solution frequently involves an analysis of alternative development options for the energy supply system as a whole, because of strong interlinkages and complementarities that exist among individual projects. Special efforts are also made to ensure that the project design will help transfer new technology to the borrower, which can be applied to benefit the sector as a whole. Equally important is the design of project implementation arrangements which will create a team of managers to maintain, operate and expand the facilities provided under the project.

The Bank's approach to project financing also ensures that there is a continuing interaction between project specific issues on the one hand and overall sector policies and priorities on the other. At project appraisal and negotiation, overall sector issues are often discussed in detail and agreements reached on specific programs for their resolution. The range of issues addressed through this dialogue can include the formulation of subsector development strategies, demand management and pricing, institutional reform, resource utilization and the respective roles of public and private agencies in the development of the sector.

The Bank's participation in specific energy projects is only one vehicle for the analysis of energy sector issues and the ensuing dialogue with national policy makers. An equally important and complementary mechanism is nonproject assistance in the form of an increasing volume of direct assistance provided through sector studies and support for preinvestment work. The largest component of this work is the joint

UNDP/World Bank Energy Assessments Program which is designed to help individual developing countries formulate a strategy for addressing their principal energy issues. Energy assessment reports have been completed or are under preparation in 48 countries and an additional 22 countries are expected to be covered by December 1985, when the program is scheduled to end. The assessments analyze the scope for changes in pricing, institutional arrangements and other policies to encourage domestic energy production and the more efficient use of energy. The reports are prepared by inhouse staff and experts brought together for this specific purpose, with the close collaboration of host government officials and the staff of the major energy agencies in the country. An unusual feature of the assessments is that the final reports are circulated to all the major donor agencies and can therefore be used as an important tool for aid coordination and as a framework for multilateral and bilateral assistance to the energy sector. For example, they have been used at meetings of Consultative Groups (Uganda, Sudan, Nepal, Bangladesh, Indonesia) and the UNDP-sponsored Round Tables (Burundi). More important is the fact that the governments concerned have found these reports to be useful and are making extensive use of the advice provided by the assessments.

A related program, the Energy Sector Management Assistance Program (ESMAP) was started with the UNDP in April 1983 to help countries implement the main recommendations of the Assessment Reports. The Program provides staff and consultant assistance to define and justify the policy, investment and technical assistance options identified by the assessments so that national policy makers, private investors and

official assistance agencies can act more rapidly to implement them. A good example of ESMAP involvement in project preparation is the work carried out on improving the efficiency of wood energy use in the tobacco curing industry in Malawi. The Energy Assessment Report for Malawi had identified this a priority because the tobacco industry accounted for approximately forty percent of the nation's fuelwood use and there was considerable evidence to suggest that the industry's fuelwood requirements could be substantially reduced through low cost investments to improve the energy efficiency of traditional tobacco barns. The Government needed assistance in defining the technical and economic aspects of a program to effect these improvements, so the ESMAP carried out a prefeasibility study which identified and evaluated the various technical packages that could be used to improve the energy efficiency of tobacco curing and defined a $0.4 million pilot project to install the most profitable of these improvements in a number of the barns. This pilot project is now being implemented with financial assistance from an IDA credit and should be followed by a nationwide program to improve the energy efficiency of the tobacco industry, thereby helping to conserve Malawi's most important energy resource.

In addition to project preparation, the ESMAP can also assist in the analysis of institutional and policy options and the definition of technical assistance requirements for establishing an effective energy sector management capability. As with the Energy Assessments Program, ESMAP reports are also circulated to all interested donors and can be used as a basis for programming their assistance efforts. In the first year of the ESMAP program, about 40 specific activities had been

completed or were underway in 18 countries. The initial impact of this work has been extremely encouraging, particularly in the area of project generation where nearly all the projects formulated and justified by the ESMAP reports so far have been, or are being, taken up by donor agencies.

Finally, in addition to its sector analysis, technical assistance and project financing the Bank's Structural Adjustment Lending also frequently provides the mechanism for discussing and resolving important energy sector issues. Most of the ..... Structural Adjustment Loans approved in FY83 include some emphasis on the restructuring of energy policy and programs. This emphasis is expected to continue because, for many developing countries, changes in energy supply and demand patterns will be an integral feature of their overall adjustment efforts.

Thus, the Bank uses a variety of instruments to assist developing countries in formulating and implementing an effective energy sector strategy. A distinguishing feature of the Bank's involvement is an emphasis on ensuring that all these elements are part of an integrated strategy and a long term commitment to improving the energy prospects of the developing countries. This approach is reflected in the mix of activities executed in specific countries. It also determines the focus of the Bank's work in each of the energy subsectors, the principal features of which are discussed in the following sections.

Subsector priorities

Despite the recent diversification in the Bank's energy program, electric power remains the largest component, accounting for 60% of the total energy lending in FY83. This is partly a reflection of the

continuing high requirements for electric power investments in the developing countries -- approximately $60 billion per year -- as well as the fact that these investments have to be implemented almost exclusively by the public sector. However, although electric power projects are the most established form of Bank lending, their selection and design have been fundamentally affected by the rise in oil prices. The analysis of power generation projects has become more complex because alternatives are more numerous and because their implementation often has to be closely coordinated with primary energy development projects in other subsectors. A good example is the Twelfth Power Project for Indonesia supported by a $300 million Bank loan. The generating capacity being added through this project will make use of indigenous coal and geothermal resources which are themselves being developed through other projects.

An important lesson which has emerged from the Bank's recent power sector experience is the need to focus on improving the efficiency of existing plant and operations which can often help to delay expensive investments in new capacity. Under the Energy Sector Management Assistance Program, audits of existing generating plant have been carried out in a number of countries including Kenya, Sri Lanka and Sudan and have identified relatively low cost measures which will improve plant operating efficiency and reliability as well as adding to available capacity. Similarly, excessive losses in transmission and distribution, frequently due to a neglect of this area because of the pressure to use available resources to add new generating capacity, can also be reduced quickly and cheaply through the rehabilitation and redesign of existing

facilities. Five of the 15 power projects in FY83 were primarily aimed at improving transmission and distribution facilities and the focus on this area is expected to grow.

The Bank's oil and gas program has expanded particularly rapidly since the first loan in 1977 for the development of the Bombay High Oil field in India. In FY83, oil and gas lending reached nearly $1 billion for 17 projects covering both predevelopment and development activities. This program has three objectives. First to help develop realistic and appropriate national petroleum sector strategies which will maximize the contributions from all sources -- private and official, equity and debt. Second, to help countries prepare and promote prospective acreage to domestic and international oil companies so as to increase the level of private sector activity in the country. And third, to help the government finance and implement effectively its own program of petroleum exploration and development wherever this is part of the appropriate development strategy for the country. For most of the countries covered by the Bank's oil and gas program, attracting outside private financing is an urgent requirement and the Bank's exploration promotion projects respond most directly to this need. Twenty-six exploration promotion projects had been approved by the end of FY83. These projects make available better data on geological prospectivity for private investment and assist in developing investment terms and conditions which provide a fair balance between the interests of the country and the investor. The involvement in Guinea Bissau provides a good example. International oil companies had explored there unsuccessfully and abandoned all acreage. To stimulate new interest, in

FY81 the Bank financed a new limited offshore seismic program. The data produced were integrated with previously acquired data and the package was then made available to industry along with an invitation to submit exploration investment proposals. By the end of 1983, new exploration agreements had been signed with six companies. A follow up FY83 project will help the country acquire and package additional geological information on prospective areas. Exploration promotion projects have reached the negotiation stage in 13 countries, with 20 exploration agreements signed and another 11 at an advanced stage of preparation.

During FY83, the Bank also supported the exploration and/or appraisal activities of national oil companies in five countries. The basic rationale for this type of Bank lending is that in a number of cases, the priority attached to exploring a particular field by the international oil industry -- which has to make worldwide choices in allocating its limited technical, managerial and financial resources -- may differ markedly from the perspective of a host country which has more limited options. This difference is exacerbated when the area has prospects for natural gas rather than oil, because of the much more limited export prospects for the former. Of the five FY83 exploration projects, two (Turkey and Morocco) focussed on natural gas, one (Philippines) on geothermal energy, one (India) for both oil and gas, and one (Madagascar) on defining the prospects for the development of a heavy oil deposit.

Natural gas accounts for a growing share of the Bank's petroleum development projects - $265 million or 43% of petroleum development lending in FY83. The increasing focus on gas reflects the Bank's recent

experience, which has shown that the potential contribution of natural gas to meeting the energy requirements of the developing countries had been generally underestimated and that the international oil companies do not have the same interest in gas production for the domestic market as they have for oil. Recent country studies have estimated that the costs of gas development are lower and the potential domestic demand is higher and more diverse than previously believed. As a result the demand for natural gas in the LDC's is expected to grow rapidly in the next decade and in some large countries -- such as Nigeria and Bangladesh -- gas is likely to supply a high share of the incremental commercial energy demand over this period. However, the assessment of gas reserves and markets is at a relatively early stage in most developing countries and many of them require assistance in formulating an integrated gas development strategy and in defining better contractual, legal and financial arrangements for gas production, transmission and use. The Bank's efforts in this sector are geared to provide this assistance as well as to help finance the large investment costs for gas production and the associated infrastructure.

In the refinery subsector, the changing pattern of petroleum product demand in the developing countries has rendered many existing refineries unsuitable and resulted in an imbalance, which is characterized by a growing shortage of diesel fuels and a surplus of heavy fuel oil and, frequently, gasoline as well. To tackle this problem developing countries need to act on a variety of areas ranging from relative fuel pricing and utilization policies to investments in secondary processing facilities to convert fuel oil into middle

distillates. In addition there is an acute need to rehabilitate and improve the energy efficiency of existing refineries, many of which are over fifteen years old and were designed to minimize capital costs and operate at energy efficiency levels that are no longer optimal. Thus while the Bank has not participated in financing grass-root refineries, it does assist in this area by helping developing countries formulate appropriate refinery subsector strategies, evaluating the technical and economic merits of alternative conversion schemes, and financing secondary conversion and refinery efficiency improvement projects. By the end of FY83, refinery sector reviews had been undertaken in 32 countries and followed up by eight projects financing either the installation of secondary conversion and energy efficiency facilities (Argentina, Bangladesh, India, Portugal) or engineering and technical studies to determine the most economic source of liquid fuels for the country and to help evaluate the economic and technical viability of proposed investments (Pakistan, Peru, Zambia and Zimbabwe).

The Bank's involvement in the coal subsector is relatively recent with FY83 accounting for three of the eight projects that had been approved till then. Their principal focus is to help developing countries overcome the recurrent constraints of the absence of a coherent coal development strategy, the limited availability of good geological data, poor coordination between coal production, infrastructure and utilization projects and an institutional framework which is characterized by a range of bureaucratic obstacles. These constraints have raised the cost of domestic coal production in many developing countries and are retarding the increased use of this resource to

substitute for more expensive oil. To help developing countries identify and overcome these constraints the Bank carried out coal/lignite subsector studies in 27 countries over FY78-83 and has followed up with specific projects to address the principal issues identified by this work. The FY83 project in Zambia provides an example. This project, which followed a coal subsector review carried out as part of the energy assessment, will finance a detailed feasibility study to rehabilitate the Maamba Colliery which is currently operating at only one-half of the design capacity. The project will also finance procurement of initial spare parts needed to keep the mining complex operating during the study period and to improve plant performance and the quality of the coal produced by the colliery.

The urgency and importance of action to tackle the growing fuelwood crisis in most developing countries is now widely recognized. However few countries have the infrastructure and institutional capability to support large scale fuelwood planting and the principal lesson that has emerged from recent experience in this area is that a considerable amount of groundwork must normally be done over several years before large scale planting programs can be effectively implemented. The Bank's own lending for fuelwood projects has therefore grown more slowly than anticipated, amounting, over FY79-83, to about $360 million for both freestanding fuelwood projects and for fuelwood components in agricultural or other forestry projects. In addition to financing plantations, nurseries and associated infrastructure, these projects have had a heavy emphasis on technical assistance and institutional strengthening. Many of them include village level and

national demand surveys; land use studies; research into fast growing tree species, agroforestry crop combinations and allied forestry research problems; introduction of more efficient wood burning stoves and charcoal kilns; and support for strengthening forestry sector institutions. An example is provided by the FY83 Jammu-Kashmir/Haryana Social Forestry Project in India which is assisted by a $33 million IDA credit. In addition to the financing of over 100,000 hectares of various types of plantations in the two states, the project provides for an extensive program of training for forestry sector staff and a series of technical and socio-economic studies to evaluate the effectiveness of alternative wood production, collection handling and storage techniques, to determine farmer preferences for different species, and to obtain reliable information on the consumption and availability of fuelwood and other forest-based products in both rural and urban areas.

The Bank also has a small but growing involvement in supporting the commercialization and development of other non-conventional renewable energy applications, some of which are particularly well suited to meeting the energy needs of the developing countries. Here the Bank's activities include the financing of biomass alcohol projects (Brazil); the inclusion of renewable energy technologies in Bank projects to obtain operating experience and determine the most economic systems and applications (minihydro in Sri Lanka, solar and wind energy in Cyprus); and institution building assistance to develop local capacity for utilizing renewable energy (Portugal, Cyprus). The Bank has also undertaken a systematic review of the technical and economic status of

several technologies; the results of the work on biomass gasification and solar pumping have already been published.

While the bulk of the Bank's energy lending has been for supply development projects since 1979, there has been an increasing emphasis on efficient energy utilization through direct support for energy efficiency improvement projects. These projects complement the emphasis on energy pricing and demand management in the Bank's policy advice and are often identified through the analysis of the energy assessments and other sector studies. Most of the energy efficiency improvement projects to date have focussed on the industrial sector which is generally the largest user of energy and where there is a wealth of comparable recent experience in the industrialized countries. These projects normally include the provision of considerable technical assistance for energy audits and institutional strengthening as well as financial support for major investments in retrofitting existing plant and processes. A good example is the $309 million FY83 Energy Diversification and Conservation Project in Hungary which will fund major fuel substitution programs (domestic coal and natural gas for oil and imported coking coal) as well as 62 small industrial energy saving projects.

Conclusion

Active involvement by the Bank in energy continues to be essential because of the priority the energy sector has in the developing countries, the urgency of adjusting sector strategies and by the very large volume of financing required by this sector in all countries. Bank financing plays an important catalytic role by attracting other investors and lenders to participate in high priority, economically sound and

financially attractive projects in all energy subsectors. This resource mobilization function is particularly important because the Bank's own energy lending cannot exceed a quarter of its total lending without displacing priority projects in other sectors and will therefore continue to account for only about five percent of the energy investment requirements in the developing countries.

Nonetheless, within these constraints the Bank will continue with a diverse program of energy activities in response to the developing countries' needs. Through project financing, technical assistance and sector assessments, the Bank will endeavor to maintain its dialogue with member countries on sectoral policy issues, and to provide assistance for sector management, institutional strengthening, and implementation of rational programs of energy sector investments. The subsectoral composition of the Bank's energy lending and the content of its technical assistance activities will depend on the needs and priorities of individual countries, taking into account the availability of technical advice and financing from other sources, and the potential contribution the Bank can make not only in mobilizing financial resources but in a wide range of other dimensions.

Table 1

World Bank Energy Lending 1979-83

	1979		1980		1981		1982		1983		Totals 1979-83		Percent 1979-83	
	No. of projects	Millions of dollars	No. of projects	Millions of dollars	No. of projects	Millions of dollars	No. of projects	Millions of dollars	No. of projects	Millions of dollars	No. of projects	Millions of dollars	No. of projects	Millions of dollars
Power	18	1,355	24	2,392	17	1,323	21	2,131	15	1,758	95	8,959	54	70
Coal	-	-	1	72	1	10	3	227	3	18	8	327	5	2
Oil and Gas	4	112	13	385	12	650	14	539	17	1,038	62	2,724	34	21
of which:														
Exploration promotion	-	-	5	36	6	33	8	36	7	84	26	188	15	1
Exploration	-	-	3	96	3	70	1	20	5	344	12	530	7	4
Oil development	1	3	2	60	2	462	3	303	3	345	11	1,172	6	9
Gas development	3	110	3	194	1	85	2	180	2	265	11	834	6	7
Energy-related industry	-	-	-	-	1	250	6	460	5	161	12	871	7	7
TOTAL	22	1,467	38	2,849	31	2,233	44	3,357	40	2,975	175	12,881	100	100
Energy as % of total Bank lending	-	15		25		19		26		21		21		

Note: In addition to lending for commercial energy development, fuelwood lending amounted to about US$360 million during 1979-83.

THE WORLD BANK/INTERNATIONAL FINANCE CORPORATION

OFFICE MEMORANDUM

To: Distribution April 5, 1984

From: Masood Ahmed, Acting Chief, EGYEA

Subject: ESMAP: Activity Initiation Report
Ethiopia: Analysis of Power Supply Options for ERESA ICS

1. An important focus of the recently completed energy assessment for Ethiopia was the least cost power supply option for the ERESA interconnected system serving the northern highlands and coastal areas in the vicinity of Asmera and Massawa. Unlike the southern (EELPA) grid, the northern system generates electricity entirely from petroleum which, along with the the old age and low efficiency of much of the existing 40 MW of generating plant, results in high production costs (over 10¢/kWh). Preliminary analysis by the assessment mission suggests that this cost could be reduced by substituting some of the higher cost oil-fired system plant with slow/medium speed diesels. However, this conclusion needs to be verified through further detailed analysis which would also take into account other options for power generation. Closely related to the replacement issue is the selection of new generating equipment to meet the anticipated three-fold increase in system demand over the next 10 years. This choice needs to be made urgently given the projected supply/demand situation for 1986 onwards.

2. The objective of the proposed ESMAP exercise is, therefore, to carry out the additional analysis required to establish the nature and magnitude of additional generating plant requirements both to meet incremental demand as well as to replace existing low efficiency equipment. Detailed terms of reference for this activity are attached. This activity will be complementary to, and will take account of, the ongoing ESMAP power system efficiency study for Ethiopia. The field work will be carried out in the second half of April and will overlap with the power efficiency audit mission. A draft report on this activity is expected to be completed by July 1984. The estimated cost of the proposed activity is $20-25,000.

3. The project was attributed a high priority by the Government during the review of the draft assessment report in Addis Ababa in January, 1984. The proposed ESMAP involvement responds to a subsequent request by the Government and EELPA for an early evaluation of the northern system supply options so as to enable them to make and implement the required investment decision in adequate time.

4. Please send your comments to Mr. K. Newcombe (7-4547) or to myself (7-4545).

Attachment.

Distribution:
Messrs. Wyss, Bronfman, Wackman, Gusten (EAP);
Gue, Elmendorf, Jordan, Codippily (EA2);
Kohli (IND); Weissman (EISVP);
Rovani, Rao, Bourcier, Sadove, Fish, Dosik, Heron, Saunders,
Bauer, Kalim, Bharier (o/r), Bates (o/r) (EGY)

cc and attachment cleared with Mr. Besant-Jones (EAPEG)

MAhmed:aaf.

ETHIOPIA

Power Development Study for ERESA ICS

Terms of Reference

A. Objectives

The objectives of the study are as follows:

Stage 1: to determine the least cost option for generating power to meet forecast demands on the ERESA ICS to 1995. 1/

Stage 2: to carry out the preliminary engineering of the project selected as the next step and to prepare cost estimates. The information should be presented in such a manner and detail as to assist Government and EELPA to secure financing for the project from multilateral and bilateral financing institutions.

B. Background

1. The ERESA supply system includes an interconnected power system incorporating supply to the northern regional capital of Asmera and the coastal city of Massawa, both in Eritrea. There are generation facilities at both cities which are linked by 66 kV transmission lines. In Asmera there is fuel oil fired steam plant, as well as medium and slow speed diesels burning both fuel oil and diesel oil alone or in mixtures. The installed plant is listed in the attached table.

2. The steam plant has recently been refurbished though its thermal efficiency is poor (about 20%), whereas the new medium speed diesels are of much higher efficiency and may well prove no more difficult and costly to operate and maintain. About 20 MW of smaller diesels fuelled by diesel oil are due for retirement. Peak demand in 1983 was 20.1 MW and it is expected to grow to about 65 MW in 1993. In 1983 ERESA ICS sales and generation were 85.8 GWh and 98.7 GWh, respectively. Energy production is expected to grow to 317 GWh by 1993.

3. The present firm capacity in ERESA is 25.8 MW with steam and 10.8 MW without, assuming the small Kagnew diesels of 6.0 MW total are retired, and system reserve is the two largest units out at any time. In order to meet a peak demand of 37.7 MW in 1989, about 18-20 MW is required while maintaining the steam plant, or about 33-35 MW additional, if the steam plant is retired.

1/ All dates in these terms of reference are according to the Gregorian Calendar.

4. The short-run marginal cost of supply for the ERESA system currently exceeds 10 US cents/kWh and the LRMC is close to 16 US cents/kWh. The average tariff yeild, however, is close to 7 US cents/kWh, and the annual subsidy implied is about US$6 MM.

5. The energy assessment mission formed the view that considerable savings could be made by expanding the fuel oil component of the diesel generation in the ERESA system at the expense of fuel oil fired steam generation. Here the choice is between medium speed (400-500 rpm) and slow speed diesels (150-200 rpm), and will be influenced by anticipated maintenance complexity, cost and thermal efficiency to the generator terminals of the available technology. However, all reasonable options for supply within the next ten to 15 years must be evaluated in determining the least cost mode of supply and the desirable program of investment. Therefore, the prospect of interconnection of the northern supply system with the EELPA ICS for the delivery of hydropower, as well as coal and geothermal power, must be evaluated as power sources for the current ERESA supply region. Geothermal resources are yet to be proven within economic distances from the supply region, though the prospects of future resource confirmation must be considered in determining the scale of implementation of any near term option utilizing imported fuels.

6. If the Bank's view is confirmed by this analysis, the additional capacity requirement will be met with slow speed diesels using fuel oil. Depending on the recommended fate of the present steam plant, this will entail an investment of either about US$16 million or about US$30 million. The investment should be made as soon as possible, which for practical reasons means a project construction period of about 10 months with commissioning of plant late in the second half of 1986. Funding must be sought, then, during the remainder of 1984 and confirmed in the first quarter of 1985.

C. Terms of Reference

Stage 1:

(i) Review the generation capabilities of existing and committed plant in terms of available capacity and expected life in conjunction with the review being carried out under the Power System Efficiency Study.

(ii) Define thermal power options for adding generating capacity to the system which should include medium and low speed diesel plant, oil-fired and coal-fired steam plant, in terms of operating characteristics, available unit sizes, capital cost, thermal efficiency and fuel type consumed, plant availability, maintenance requirements and costs, other non-fuel operating costs, and required delivery and commissioning periods.

(iii) Review the outline proposal for extending the EELPA ICS transmission system to the ERESA 2/ for alternative cases in which the location of interconnection with the EELPA ICS is either Finchaa or Bahar Dar.

(iv) Derive alternative programs for providing generation facilities for meeting the forecast power demand on the ERESA ICS to 1995 3/4/ composed of the options listed in clauses (ii) and (iii) above, including programs with the introduction of the interconnection option at different dates. These programs should show projected contributions from the component generation sources for meeting capacity and energy demands, and should make due allowance for adequate system reserve capacity, the economic life of existing generation plant, and the economic value of relocating before the end of their economic lives all or some of the small diesel units at Gajaret as power sources for small isolated load centers (the SCS).

(v) Review the capacity of the Massawa-Asmara transmission line to serve the load projected under the optimal locations of new power plant in the event that expanded thermal generation is favored.

(vi) Evaluate the alternative programs and thereby identify the least-cost development program by deriving the present value of the economic costs in terms of capital and operating costs 5/ of meeting demand up to the forecast 1995 level, taking account of economic working lives and residual values at the end of an appropriate run-out period, at a 12% discount rate valuing foreign exchange costs at a 33% premium over the present official exchange rate of Birr 2.07 = US$1.0.

2/ This proposal is included in Acres "Power Planning Study" of October 1982.

3/ Forecast demand on the ERESA ICS is given in the UNDP/World Bank Report "Issues and Options in the Energy Sector" (draft final version, March 1984) - Table 3.10.

4/ Typical ERESA average daily load duration curve to be adopted is given in the Coopers & Lybrand Report "Tariff Study and Asset Revaluation - Final Report" (August 1983) - Fig. 3.3.

5/ The interconnection of the EELPA and ERESA system option should be debited with the economic value of energy delivered into the transmission link from the EELPA ICS, valued at the marginal cost used in the Power System Efficiency Study.

(vii) Test the sensitivity of the evaluation to changes in projected demand, capital cost, fuel cost including changes in the relative costs of diesel oil and heavy fuel oil, marginal cost of power from the EELPA ICS for the transmission linkage, and discount rate.

(viii) Evaluate the long-run marginal economic cost of meeting increases in capacity and energy demands on the ERESA ICS.

(ix) Prepare detailed cost estimates of the selected program broken down into foreign exchange and local currency components including tax elements.

Stage 2

(x) Prepare the preliminary design for the project selected as the next step and prepare an outline bill of quantities for the project showing unit costs of the various bill items; the project shall be technically compatible and economically consistent with the proposals for improvements to the ERESA power system that will be recommended under the Power System Efficiency Study.

(xi) Present the estimated cost of the project selected as the next step according to major procurement and construction contracts and also into possible financing packages. The cost of each major project item should be made up of base cost, engineering, physical contingency and price escalation components. Interest during construction should be shown separately, and physical contingencies should be estimated for each major component of the project. Yearly disbursement schedules for the construction period should also be given for foreign exchange and local currency components separately.

(xii) Outline a program of implementation for the selected project allowing a suitable period for preparation of a financing plan.

Program and Reports

The sequence of events for the study will start with the execution of Stage 1 followed by a review of the Stage 1 findings by EELPA and the World Bank to select the project, and will conclude with the execution of Stage 2.

A draft report on Stage 1 will be presented immediately on completion of Stage 1 which will give the results of the analysis of development options and will identify the least-cost development program.

A draft final report will be presented at the end of Stage 2 and will present the information in full specified in these terms of reference. The final report will be produced after review of the draft report by EELPA and the World Bank, and it will incorporate comments arising from this review.

Stage 1 of the study will start on April 15th, 1984 with a field visit to the ERESA region that will coincide with the fieldwork in that area for the Power System Efficiency Study. The draft report on Stage 1 shall be ready for discussion by the time that the Power III appraisal mission is due to start, scheduled for May 14th, 1984.

Stage 2 of the study will commence upon receipt of the decision from the World Bank on the project selected for preparation. The draft final report shall be presented to EELPA and the World Bank within three weeks of commencement of Stage 2. The final report shall be presented within one week of receipt of comments from EELPA and the World Bank.

JEBesant-Jones/KNewcombe:cuc

Existing and Committed ERESA ICS Generation

Station Name	Number and Type of Generation Units	Total Installed Capacity (MW)	Year of Commissioning	Retirement Date
A -- Existing				
Belesa	1 X 10 MW steam	20.0	1966	1996
	1 X 5 MW steam		1964	1994
	1 X 5 MW diesel		1969	1989
Kagnew	4 X 1.5 MW diesel	6.0	1966	1981
Gajaret	10 X 0.585 MW diesel	5.8	1979	1994
	9 X 0.568 MW diesel	4.6	1983	1998
Girar	1 X 1.1 MW diesel	9.4	1958	1978
	1 X 1.1 MW diesel		1959	1979
	1 X 1.1 MW diesel		1961	1981
	1 X 1.1 MW diesel		1962	1982
	1 X 5.0 MW diesel		1973	1993
TOTAL EXISTING (1982 year end) 1/		35.4		
B -- Committed				
	2 X 5.0 MW diesel	10.0	1983	2003
TOTAL ERESA ICS (1983)		40.8		

Source: ACRES International - EELPA

1/ Excluding plant due to have been retired before 1984.

WORLD BANK / INTERNATIONAL FINANCE CORPORATION

OFFICE MEMORANDUM

TO: Messrs. Gulhati (EANVP); Dunn (EA1DA); Bronfman (EAPDR)

DATE: April 4, 1984

FROM: Masood Ahmed, Acting Chief, EGYEA

SUBJECT: Kenya: Energy Assessment Status Report

Attached please find, for your review and clearance, a copy of the final version of the above report which has been prepared under the UNDP/World Bank Energy Sector Management Assistance Program. This version incorporates the comments made by the Government of Kenya on an earlier draft which was discussed in Nairobi in February, 1984. Following your clearance the report will be finalized for distribution under the Energy Sector Management Assistance Program.

Attachment.

cc: Messrs. Wackman (EAP); Iskander, Bharier (o/r) (EGY)

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Joint UNDP/World Bank
Energy Sector Management Assistance Program

Activity Completion Report

No. 015/84

Country: KENYA

Activity: ENERGY ASSESSMENT STATUS REPORT

APRIL 1984

Energy Sector Management Assistance Programme

The Joint UNDP/World Bank Energy Sector Management Assistance Programme (ESMAP), started in April 1983, assists countries in implementing the main investment and policy recommendations of the Energy Sector Assessment Reports produced under another Joint UNDP/World Bank programme. ESMAP provides staff and consultant assistance in formulating and justifying priority pre-investment and investment projects and in providing management, institutional and policy support. The reports produced under this Programme provide governments, donors and potential investors with the information needed to speed up project preparation and implementation. ESMAP activities can be classified broadly into three groups:

- Energy Assessment Status Reports: these evaluate achievements in the year following issuance of the original assessment report and point out where urgent action is still needed;

- Project Formulation and Justification: work designed to accelerate the preparation and implementation of investment projects; and

- Institutional and Policy Support: this work also frequently leads to the identification of technical assistance packages.

The Programme aims to supplement, advance and strengthen the impact of bilateral and multilateral resources already available for technical assistance in the energy sector.

Funding of the Programme

The Programme is a major international effort and, while the core finance has been provided by the UNDP and the World Bank, important financial contributions to the Programme have also been made by a number of bilateral agencies. Countries which have now made or pledged initial contributions to the programmes through the UNDP Energy Account, or through other cost-sharing arrangements with UNDP, are the Netherlands, Sweden, Australia, Switzerland, Finland, United Kingdom, Denmark, Norway, and New Zealand.

Further Information

For further information on the Programme or to obtain copies of completed ESMAP reports, which are listed at the end of this document, please contact:

Division for Global and Interregional Projects
United Nations Development Programme
One United Nations Plaza
New York, N.Y. 10017

OR

Energy Assessments Division
Energy Department
World Bank
1818 H Street, N.W.
Washington, D.C. 20433

KENYA

ENERGY ASSESSMENT STATUS REPORT

APRIL 1984

Abbreviations

AFC	Afro-Chemical Food Company, Kenya
CIDA	Canadian International Development Association
E/DI	Energy/Development International
EAP	East Africa Projects Division, World Bank
EAPC	East Africa Portland Cement Company
EAPL	East African Power and Light Company
EGY	Energy Department, World Bank
ESMAP	Energy Sector Management Assistance Program, UNDP/World Bank
GOK	Government of Kenya
GTZ-SEP	German Agency for Technical Cooperation - Special Energy Project
ICS	Improved Charcoal Stove
IFC	International Finance Corporation
IND	Industry Department, World Bank
ITDG	Intermediate Technology Development Group
IWS	Improved Wood Stove
KCFC	Kenya Chemical and Food Corporation
MEPD	Ministry of Economic Planning and Development
MOE	Ministry of Energy, Kenya
TA	Technical Assistance

Table of Contents

I. BACKGROUND

1.1 The Kenya energy assessment mission of March 1981 produced a draft report which was reviewed with the Government in March 1982; the final report was issued in May 1982. Some of the findings of the report were used in determining the agreement for the second SAL of June 1982 which included an undertaking by GOK to furnish the Bank with a comprehensive energy investment program providing sector-wide production and conservation. This document was sent for review by the Bank in March 1983.

1.2 Economic conditions have deteriorated in Kenya since the 1981 energy assessment mission. Whereas net energy imports took up 36% of export earnings in 1980, by 1982 this figure had grown to 57%. GDP growth, reported at 3.8% in 1980, had fallen to about 3% in 1982 and showed little sign of improvement in 1983/84. Foreign exchange reserves have been drawn down consistently since 1980 to the point where energy sector investment and aid essential to arresting the worsening balance of payments cannot fully be utilized because of stringencies on government expenditure which in turn limits effective counterpart assistance. The continuing disagreement between government and oil companies over refinery management and investment further aggravates the effects of imported energy on economic development. In this situation untrammelled assistance to the private sector and successful parastatals to implement fuel saving measures is vital, along with skilled advice to the government on policy measures.

II. RECOMMENDATIONS AND RESPONSES

Policy Advice Offered	Government and Bank Group Responses
Immediately divert long haul freight to the railway on the Mombasa-Nairobi route, thereby saving an estimated 12 million litres of diesel.	GOK accepts this as a priority policy objective but is unable to implement the transfer because of the unreliability of rail operations. The main cause appears to be lack of spare parts--related in turn to limited foreign exchange availability. While containerization of the rail cargo handling system proceeds, it lags behind road transportation in quality and efficiency which further reduces its competitive position.
Do not implement the small diesel bus Matatas program on a large scale unless its	The matatas fleet appears to have grown rapidly since the time of the assessment mission without either government

economic viability can be established.	support or hindrance. Owner/operators are maintaining fares at 1 Ksh below the public bus system, and there is no government price control on matatas. This transport mode is flexible and convenient for commuters. However, the fact that it is all diesel powered is recognized by GOE as undesirable and this is being tackled indirectly though proposed increases in import duties for diesel vehicles, as discussed below.
Review the import duty on coal to make sure it does act as a deterrent to the economic substitution of fuel oil. Import duty was 30% of c.i.f. value in 1981. This recommendation was assigned high priority.	In the 1981 budget speech, the Ministry of Finance announced a 10% reduction in duty from 30% to 20% of c.i.f. price, indicating that further reductions, perhaps to the elimination of duty, later may be implemented. Since then across-the-board increases in duty have lessened the impact of this reduction. The current import duty computes at 22.2% (US$64.6 c.i.f. ex Maputo c.f. US$14.36 duty per tonne). This issue will be fully addressed in the course of the coal handling and substitution study [4.2 (iii)]
Reduce the differential between normal and off-peak power tariffs to better reflect economic costs and benefits.	New tariffs raise the rate of return to 5% instead of the 8% agreed as a covenant to Bank lending. MOE 1/ stated that they attach little significance to this tariff measure, as they have no firm view whether it should be retained or removed. One reason EAPL has retained the facility is in deference to the 19,000 households with interruptible supply to whom the off-peak rate applies. This is a declining proportion of electric hot water users. It is recognized by MOE that this domestic off-peak tariff will have to be reviewed as part of any large scale solar water heating investment project,

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1/ In the course of the Government's review of this Status Report, the Ministry of Energy was expanded to include regional development functions and is now, accordingly, the Ministry of Energy and Regional Development (MOERD). To be historically accurate, reference to MOE will be retained in the text as the basis of this report was laid with that former Ministry.

	or as part of a comprehensive tariff study.
Realign sales taxes on petroleum fuels to bring premium gasoline and automotive distillate prices close together and hence to reduce the distortion in demand for diesel in relation to refinery production. This recommendation was assigned high priority.	MOE indicated that the government's hesitation to reduce this differential was due to the financial impact on agriculture and manufacturing sectors both heavily reliant on diesel. There is minimal data to quantify this impact or assess its real significance. As an alternative, MOE has proposed a large increase in import duties for diesel vehicles. This paper was put to the Treasury which has authority to implement the measure without going to Cabinet. Moreover, the new MOERD expressed reservations about the political acceptability of this proposal.
Place all energy related programmes under the Ministry of Energy and strengthen its structure and staffing.	The MOE has grown substantially since 1981 and has placed expatriate advisors from E/DI in line positions. The German GTZ-SEP (Special energy project) has provided staff in an advisory role to the Ministry though not as departmental staff. The authority of the MOE is clearly related to its status within government. It is obviously subservient to the Ministries of Finance and Economic Planning and Development. MOE now has a greater capability to plan and establish investment programmes for the sector than at the time of the assessmment. However, there is still some disaggregation of responsibility and planning for woodfuels and agroforestry with an obvious woodfuel component. It is not apparent that MOE is aware of the many initiatives being struck in this field in Kenya. Despite the cooperative agreement with respect to agroforestry between the Energy Ministry and the Ministry of Agriculture and Livestock Development, and the Ministry of Environment and Natural Resources, the MOE appears to have less influence than desirable in planning and investment programming in this subsector, though it should not be

	involved directly in implementation. Other agencies known to be involved are the Office of the President, and the women's organization Mandeleo Ya Wanake.
The mission supported the merger of the Kenya Power Company and the Tana River Development Company to reduce overheads and improve efficiency in this subsector.	This merger remains Government policy and has been pursued more actively in recent months. MOE suggests that the unification of operations is almost effective and only the dual top management structure remains. MOE officials believe the official merger will occur quite soon.
Proposed Studies and Technical Assistance	Government and Bank Group Response
Complete pre-investment studies for the Turkwell hydropower project as soon as possible and examine the longer term interconnection with supply sources in Uganda and Tanzania as a matter of priority.	EAP power staff will offer as part of upcoming Kiambere project loan negotiations technical assistance to devise the least cost development plan, considering also interconnection with neighboring country supply systems. It should be noted that senior MEPD staff were most enthusiastic about establishing the potential for interconnection and independently raised the question of Bank assistance in this area.
Large-scale substitution of solar water heating for electric heating in households and industry appears economically attractive and therefore a detailed programme of large-scale installation should be developed as a matter of priority.	CIDA has provided assistance through the University of Western Ontario to assess the market for solar water heating in Kenya as a form of assistance to Government and, in effect, to a Canadian solar water heating system manufacturer, Petrosun. Full details and terms of reference for this aid project will be made available by CIDA and GOK as the outcome directly influences the scope of work of the agreed ESMAP solar water heating investment project. In addition, an engineer and analyst funded by the World Solar Foundation of London are currently documenting the number and performance of solar installations now in use in Kenya.
The expanded use of wind energy and biogass should be studied.	The main focus of the new German aid programme "Special Energy Project" (GTZ-SEP) is wind, biogas and solar for

	small scale rural applications. The programme is mounted as an advisory service to the MOE. It appears well focussed realistic and well managed and should achieve the objective specified by the energy assessment.
The potential to achieve energy self-sufficiency for all sugar mills and to generate surplus bagasse energy for sale should be studied.	Major reviews of sugar mill efficiency have been completed by SGV consultants under the Bank's sugar industry rehabilitation projects. These provide the basis for further analysis of net energy production, though such work has yet to be undertaken. GOK has expressed keen interest in pursuing this option as a result of discussions during the follow-up mission.
Immediately review the entire ethanol programme in order to rationalize and monitor production and end-use, focussing in the short term on maximizing cash flow for the KCFC distillery.	GOK has not initiated a formal review although the debacle of the KCFC investment is clearly now the subject of cabinet discussions regarded by the civil service as highly sensitive and confidential. MEPD recognizes that some rationalization must take place and has independently raised the prospect of Bank assistance here at some later date. Deliveries of ethanol have begun from the Moroni plant to blending depots. However, blending, which was supposed to start on April 15, has been held up by unresolved pricing issues between oil companies and the AFC. Consequently, production of the Moroni plant has temporarily ceased. There is no doubt that rationalization of this industry is important and should be pursued when political circumstances permit an open objective appraisal.
Improve the supply and demand data for charcoal.	Charcoal supply data remains deficient but demand data have been provided by the Beijer Institute's 'Fuelwood Cycle' study, now complete. The characteristics of feedstock conversion and supply patterns can be the subject of assistance under the USAID Renewable Energy Project and the extended Dutch forestry-agroforestry projects, priority and funds permitting.

Examine prospects for increased commercialization of fuelwood and charcoal production including pre-investment work for major peri-urban and rural plantations and large scale carbonization plants; the latter within the context of a centralized charcoal corporation, or a series of cooperatives.	There has been no systematic approach to pre-investment work on peri-urban woodfuel plantations. A conceptual beginning to this work has been made by MOE for Mombasa, though to cater for only a small portion of the near term demand. Preliminary design and costing of plantation development for a range of systems near major demand centres have been completed by the Beijer Institute. These provide the basis for detailed comprehensive pre-investment work as a part of a national strategy to meet the centralized urban-industrial market. In addition, the Shell Oil Company has proposed a 350,000 ha fuelwood development on semi-arid land to service an iron smelting industry. GOK has indicated a need for assistance to review this proposal; to design investments in peri-urban plantations; to better manage recovery of woodfuels from existing resources and to examine prospects for improving the efficiency of carbonization.
Study the prospects for converting from oil to coal in industries other than cement.	GOK has promoted conversion to coal, coal-oil mixtures and coal-water mixes in recent draft energy policy and investment strategies and in the energy component of the draft five year development plan. Recently, the government's energy planners have completed an industrial survey and have begun an in-house coal use review to prepare for a major coal conversion study funded through ESMAP. There is an urgent need to clarify the coal handling capacity of Mombasa before committing to a detailed design phase on coal conversion at any of the several major fuel oil consumers besides EAPC. This would be an essential component of an ESMAP project on interfuel substitution in the industrial sector.
Develop a programme to encourage energy conservation in small and medium sized industry, beginning with the	Progress has been made here by GOK through a survey run jointly by MOE and the Association of Manufacturers to establish energy use within factories.

establishment of a detailed data base on end-use.	A 35% response rate was achieved though no follow-up has proceeded. IND has offered a US$300,000 TA as part of the refinery energy conservation and engineering design for reconfiguration loan. This is unlikely to proceed quickly to negotiation, hence GOK has asked for assistance with industrial energy conservation under the ESMAP facility. This assistance can best be provided as part of the preparatory market analysis phase of the coal substitution, conversion and handling feasibility studies.
Proposed Implementation Activities	Government and Bank Group Response
All investment in ethanol production should immediately cease until detailed reviews are made of the industry. This action is regarded of the highest priority.	GOK responded by halting all further new investment in ethanol production facilities. The KCFC plant costing 1.5 billion KSh to date has been put into receivership but no liquidation has taken place. MEPD officials expressed fears that, since the investment is physically unprotected, listing may be occurring. The planned Riana plant proposal also has been shelved. Again the view was expressed by MEPD unsolicited, that the Bank may be able to help resolve the issue of future activity in the industry at an appropriate time.
Establish an extension service for distributing and demonstrating improved stoves, concentrating first on improved 'jikos' for cooking with charcoal in urban areas.	The barrier to constructing an extension service for improved charcoal and wood 'jikos' has been the lack of suitable rapid production techniques and smallholder entrepreneur training for the very attractive (30-50% efficiency gain) jikos now fully developed and tested. The dissemination of production techniques and modular construction facilities must proceed marketing. This bottleneck is being steadily removed with assistance from ITDG. There is little doubt that a major marketing effort could create a huge demand. This phase should be closely monitored, for if it appears to be lagging through lack of funds or

	expertise, the Bank could profitably assist and at the same time gain some experience with promotion techniques in other African markets. Kenya appears set for one of the first really successful ICS/IWS campaigns.
Establish an Energy Development Institute for interdisciplinary research of socio-economic issues emphasizing applied energy economics. The institute should not be concerned with energy technology R&D. This action is not a high priority.	The proposed Kenya Energy Development Institute is only a little closer realization than of the time of the assessment mission. The MOE as the main arbiter on the structure and function of KEDI, supports the views of the Bank on the matter. This is not a high priority issue at this time.
Execute the optimal refinery configuration, taking into account all options to meet the agreed demand.	The Bank (IND, IFC), USAID and GOK have narrowed the options for refined products supply to an agreed reconfiguration of the refinery using thermal cracking technology. Investment is now prevented by disagreements between GOK and oil companies over issues of crude procurement, partitioning of revenues from refining, and refinery management. It is apparent that these issues will not be resolved quickly and that investment will be delayed, even assuming that the proposals prove politically tenable. MOE raised the issue of splitting the conservation and reconfiguration investments.
Expand exploration for oil and gas building on initiatives already proposed by the Bank.	The EGY petroleum exploration promotion project has proceeded successfully through the first round of defining potential and soliciting interest in further exploration. These oil companies began but had to stop negotiating exploration agreements because GOK is not prepared to change foreign exchange regulations in line with normal practice regarding repatriation of profits and foreign exchange availability.
Expand geothermal exploration in Olkaria field as a matter	Since the assessment the Olkaria field has indicated even greater promise with

of priority and support continued exploration in Eburru and Lake Bogoria regions. Produce a detailed investment plan for developing the geothermal resource.	the tapping of dry steam. EGY has begun appraising a project to expand geothermal exploration in the wider Olkaria region and the Rift Valley, while EAP projects is proceeding under Power IV to finance expansion of power production from the existing Olkaria field. A long-term investment plan should follow from the EGY projects.
Complete project preparation for, and execute conversion from oil to coal at the East African Portland Cement Company (EAPC).	EAPC has commissioned a full feasibility study by Norcem Engineering for converting both from fuel oil to coal firing and from wet to dry processing. Expansion of overall production and the logistics of coal handling and transportation between Mombasa and Athi River also have been studied. The study is funded by NORAD as a grant. EAPC accepted this offer over Danish aid because Norcem had recently completed a similar study in Tanzania and also has no links with equipment suppliers. Savings of about US$1 million in foreign exchange will result, although the present coal import duty rate makes the investment very marginal. Nevertheless, the EAPC chairman wishes to proceed with the investment. The study indicates severe constraints on handling further coal imports over the additional 30,000 te/yr for EAPC.

III. RELATED ACTIVITIES BY OTHER AGENCIES

3.1 A very positive finding of this mission was the extent to which bilateral aid agencies are utilizing the energy assessment report for planning their own aid programmes in the energy sector. Much used copies of the blue cover report were produced at the CIDA, Dutch aid and GTZ programme offices, and the USAID, Beijer Institute and others referred to the document as the only comprehensive source document for energy sector analyses so far available.

3.2 It is apparent that the CIDA-financed project reviewing the solar water heating market and the GTZ-SEP are to some extent influenced by the assessment's recommendations. The USAID project was mostly defined before the outcome of the energy assessment and will not be renewed beyond September 1984. This project has focused on the establishment of six agroforestry centers leading to the training of extension workers of the Ministries of Agriculture and Environment and Natural Resources (Forestry Department). USAID cooperated directly with the Dutch in this project and in support of the Beijer Institutes 'Fuelwood Cycle' study. The Dutch Government intends to support the implementation of pilot projects on agroforestry arising from this study with US $3-4 million over the next few years, again in cooperation with the Beijer Institute. USAID/EDI funding or in-line staff support for MOE will probably cease during 1984. Ongoing aid to the energy sector therefore is heavily concentrated in rural energy and fuelwood focused agroforestry in particular. It is noteworthy that this is also the most uncoordinated of the energy sector programmes, and one in which further effort is needed to establish priorities and guidelines for effective management seem desirable.

IV. FURTHER ACTIVITIES PROPOSED UNDER ESMAP

4.1 A series of discussions held with senior staff of the Ministries of Energy, Economic Planning and Development, Environment and Natural Resources, Industry, the EAP&L and the EAPC culminated in an agreed programme of action which can be finalized by an official exchange of telexes. A ranked list of projects is presented below. MOE and EAPL raised several other projects which also may be considered for ESMAP support, subject to clarification of scope and the existing commitments by both the Bank Group and other agencies. These include:

(a) Power loss analysis for main grid (submitted to UNDP but rejected, apparently due to lack of funds);

(b) An analysis of interconnection options to use major power resources of neighboring countries;

(c) A full tariff study to determine long-term and a short-term electricity pricing strategy;

The best vehicle for these studies is the World Bank loan for the Kiambere Project now being negotiated, or failing that, the expanded Olkaria field development loan facility.

Solar Water Heating

Following the recommendation of the assessment mission, GOK is keen to proceed with detailed evaluation and project development for a major solar water heater installation programme. The first stage of the project financial analyses and market assessment is partly complete. The project will review and, if necessary, upgrade this phase before proceeding to design an investment package in detail. The investment package will include a financing plan and operational strategy for installing under EAPL's administration 20,000-30,000 household solar systems, plus industrial and commercial systems for hotels, hospitals and other users of low-grade hot water over a 4-5 year period. The Kenyan power system is energy rather than capacity constrained hence solar energy will displace oil-fired generation at the margin. The project will assess the capacity of local solar system manufacturers to meet the anticipated demand and will identify training requirements for installation.

Phase I: 4 man-months

Complete economic analyses for household, industry and commercial applications plus formulation of a bankable project:	$50,000
Total Project Duration:	6 months
Total project cost:	$50,000

Power System Loss Reduction Study

(This project was completed by March 1984 under UNDP/Bank Energy Sector Management Programme)

GOK had formally approved an EAPL request to UNDP for this study and this worthy project can now be re-activated as part of the ESMAP, the project entails undertaking an audit of the EAPL power system to identify points in transmission, distribution and thermal generation where losses could be reduced economically. Within the distribution system, besides inspection of equipment and facilities, a review would be made of design criteria, construction standards, and system planning, O&M and load control methodology. Metering systems and nontechnical loss potential will also be reviewed. Within the generation system, thermal power plant will be examined to evaluate points of significant loss, and procedures for monitoring generation efficiency will be reviewed. It is expected that projects to modify or install equipment will be identified in which case the relevant scope of work will be prepared to facilitate swift implementation.

Phase I 4 man-months

(i) Comprehensive power loss audit.

(ii) Detailed outline of programme of implementation and relevant costs and benefits, including terms of reference for the implementation phase.
- cost of completion was **$1,000**

Coal Handling and Substitution, Including Industrial Energy Audits

GOK is keen to proceed quickly with this project which arises from interaction between the government and the Bank over many years. With complete conversion of the cement industry to coal-firing likely, it is timely to review in detail the entire market for coal in industry and to define the required coal handling facilities at the port and inland, to interface with each point of end-use. This project will review the prospects for coal use in all large industries comparing coal with other fuels to ensure a least-cost strategy for interfuel substitution. The coal market thus defined, including the cement industry, will then become the basis of a detailed review of the present coal handling capability and prefeasibility work for expanded port and inland handling facilities as required. In the process of defining the coal market, the potential for improving energy efficiency will be established for the top 15-20 industries on the basis of a detailed energy audit.

Phase I 20 man-months

(i)	Detailed review of the economic potential for coal substitution, specifying investment levels and economic benefits	$80,000
(ii)	Review of coal handling capability (in parallel with (i)).	$40,000
(iii)	Energy audits of 15-20 major industries in parallel with part (i) to determine the actual energy demand following moderate investment and improved plant management. Study will also determine which fuel is the least cost for the industry concerned. Assuming coal, agricultural residues, woodfuels and oil.	$80,000

Duration: 4 months

Total Cost Phase I: $200,000

Phase II 25 man-months

(i)	Preliminary design and costing of handling possibilities, and project implementation planning.	$150,000
(ii)	Preliminary design and costing, and associated financial and economic analysis for upgrading energy efficiency and conversion to coal, or other least cost fuels, including raw fuel processing and handling prior to combustion.	$100,000
(iii)	Integration of technical and economic analyses, and preparation of a consistent set of bankable projects within an overall investment program.	$50,000

Duration: 8 months

Total Cost of Phase II: $300,000

Total Project Duration: 12 months

Total Project Cost: $500,000

Efficient Bagasse Utilization

4.2 GOK wishes to further define the prospect identified by the energy assessment for up-grading sugar mill process energy efficiency to generate surplus bagasse for sale as power, or as a densified solid fuel for industry and households. A detailed review of the markets for surplus power and energy in both sugar production zones and of the incremental costs and benefits of serving these markets would complement the Bank's sugar industry rehabilitation program. The Kenyan sugar industry is deteriorating financially due to artificially low sugar prices set by GOK which owns 98% of the Western zone industry. Any significant additional cash flow generated through relatively small investments with a high financial rate of return would be welcomed by industry management and GOK. This project could proceed only with a clear understanding that GOK in no way negates the need identified by the Bank (EAP-AGR) for revising sugar industry pricing policies. It is likely that this project will have to be deferred until more pressing issues of policy and management of the sugar industry are resolved.

Phase I: 6 months	
Marketing studies:	$25,000
Prefeasibility engineering reviews and economic analysis:	$50,000
Phase II: 12 months	
Full design and costing:	$200,000
Investment planning and financing strategy:	$50,000
Total Project Duration: 12 months	
Total Project Cost:	US$325,000

Commercialization and Improved Management of Woodfuel Production

4.3 GOK accepts as a high priority the assessment mission's view to establish a national plan for commercial woodfuel plantations to meet urban and industrial demands which also must incorporate a program to improve management of the existing woodfuel resource. Accordingly, this project is to build on the work of the Beijer Institute and others in designing and costing peri-urban woodfuel plantations for Nairobi and Mombasa; in developing methods to improve the recovery of existing forest residues including improved efficiency of carbonization, and in developing improved management techniques for the coastal mangrove forests. GOK also has requested a review of recent private sector proposals for large scale woodfuel plantations as fuel for pig-iron production. Dutch aid assistance is expected, at least partially, to fulfill these goals.

Phase I: 12 man-months

Regional and national economic forest management studies and woodfuel marketing and investment planning studies: $100,000

In Parallel:

Phase II: 6 man-months

Commercial woodfuel plantation design and costing. Management and marketing reviews: $100,000

Total Project Duration: 6 months

Total Project Cost: $200,000

Rationalizing Ethanol Production

4.4 The need to rationalize ethanol production is even more pertinent in the present situation than it was two years ago. The Ministry of Economic Planning and Development wishes to draw on the Bank's assistance for this purpose as an when this becomes politically possible. The project would review options for using or disposing of existing KCFC plant and blending facilities. A production cost and end-use montoring system also should be established as a management tool for the rest of the industry to permit ongoing adjustment in line with market conditions and economic viability.

Phase I: 6 man-months

Audit of productions cost analysis and monitoring design: $75,000

Prefeasibility on process optimization prospects: $50,000

Phase II: 12 man-months

Preinvestment studies on process modifications: $100,000

Total Project Duration: 6 months

Total Project Cost: $150,000

Energy Sector Management Assistance Programme

Activities Completed

		Date Completed
Energy Assessment Status Report		
Papua New Guinea		July, 1983
Mauritius		October, 1983
Sri Lanka		January, 1984
Malawi		January, 1984
Burundi		February, 1984
Project Formulation and Justification		
Panama	Power Loss Reduction Study	June, 1983
Zimbabwe	Power Loss Reduction Study	June, 1983
Sri Lanka	Power Loss Reduction Study	July, 1983
Malawi	Technical Assistance to Improve the Efficiency of Fuelwood Use in Tobacco Industry	November, 1983
Kenya	Power Loss Reduction Study	March, 1984
Institutional and Policy Support		
Sudan	Management Assistance to the Ministry of Energy & Mining	May, 1983
Burundi	Petroleum Supply Management Study	December, 1983

WORLD BANK / INTERNATIONAL FINANCE CORPORATION

OFFICE MEMORANDUM

TO: Distribution

DATE: April 3, 1984

FROM: Masood Ahmed, Deputy Chief, EGYEA

SUBJECT: ESMAP: Activity Initiation Report
BURUNDI: Development of a Production and Marketing Strategy for Improved Charcoal Stoves

1. Attached please find the terms of reference and scope of work for the above exercise which we propose to carry out under the Energy Sector Management Assistance Program. You will recall that the Energy Assessment Status Report for Burundi, circulated in final in February 1984, identified this work as a priority area for follow up technical assistance and the Government had requested that this assistance be provided through ESMAP. Subsequent discussions with GOB officials in Bujumbura have confirmed the priority of this task and the Government's interest in proceeding rapidly with its execution.

2. The work would be carried out in April 1984 by a consultant who has already been identified. The mission would also be joined by a staff member of this Division for the final week. The total cost of this exercise is estimated at $20,000-25,000.

3. Please send any comments on this to either Noel King (7-3539) or to myself (7-4545).

Attachment.

Distribution:

Messrs. Bronfman, Wackman, Gusten, Christoffersen, Buky, Grimes, Boutan (EAP);
Gue, de Capitani, Garff (EA2);
Rovani, Rao, Bourcier, Sadove, Sheehan, Fish, Dosik, Iskander, Bharier, Saunders, Heron, Kalim, Manibog, Floor, King, Bates (EGY)
Mesdames: Marshall, Dyson, Carr (EAP);
Monceaux (EA2)

Attachment cleared in substance with Messrs. Manibog and Grimes

cc: EGYEA Staff

MAhmed:aaf.

UNDP/World Bank
Energy Sector Management Assistance Program

Burundi: Development of a Production and Marketing Strategy for an Improved Charcoal Stove

Objective

1. The principal objectives of the study are:

   a) to first critically evaluate the relevant information (traditional foods and cooking practices, fuels used, performance and acceptability of traditional and improved stoves, local stove production and marketing systems, etc.) gathered to date in the activities that have been undertaken in Bujumbura to introduce improved charcoal stoves;

   b) to then critically review the nature, extent, and results of these activities, focussing in particular on the factors that have led to the success and to the problems in the improved stove component of the IDA Urban Development Project (Cr. 1049-BU); and

   c) finally, on the basis of (a) and (b) above, to formulate, cost, and map-out a schedule for an action program to produce, promote, and market improved charcoal stoves, recommending as well the institutional arrangements and the strengthening of local capacity required for coordinating and implementing such a program.

Background

2. Burundi faces the increasing depletion of its fuelwood supplies, on which almost all of its population depends for cooking and other basic energy needs. Furthermore, the resulting increase in erosion is a serious problem in a densely populated country, hard pressed for agricultural land. About 87 percent of the households in Bujumbura use charcoal as their principal cooking fuel. Bujumbura accounts for only 3.5 percent of Burundi's total population, but, given the energy losses involved in charcoal production, it accounts for 6 to 25 percent of the country's total fuelwood consumption, depending on which average per capita consumption estimate is used (.25 m^3/yr or 1 m^3/yr). The diminishing supply of fuelwood has been reflected in a three-fold increase in the price of charcoal from 1970 to 1980 compared to the fact that the consumer price index nearly doubled over the same period. It has been estimated that lower income families spend from 25 to 30 percent of their incomes on charcoal.

3. The Government and donor agencies are concerned about this problem and efforts are underway to improve the efficiency of charcoal

production and use. For example, a consultant hired under an IDA Forestry Project is currently reviewing the possibilities for improving the energy efficiency of charcoal production. An IDA Urban Development Project has attempted to improve the efficiency with which charcoal is consumed in cooking by training artisans to build an improved version of the widely used, traditional charcoal stove, the imbabura. To date, 1,700 of these new stoves have been sold at FBu 350 (US$3.90) each. In spite of the initial, enthusiastic reception of the stove and the average savings of 35 percent in expenditures on charcoal registered among 110 of the people who used it, the improved model does not seem to have really taken hold among the population. Sales of the stove seem to have dropped, and it is not certain that the artisans trained under the project to produce them continue to do so, now that they have returned to their own workshops. Complaints have been received that the stove cooks too slowly and does not draw well. According to the project people, many of the complaints stem from lack of understanding as to how to use the stove. When the door on the improved stove is fully open, the stove should not draw differently from the traditional stove without a door with the same size opening. This is not well understood by some families in the project neighborhoods.

4. Given the need to reduce fuelwood demand and the cash expenditures by citizens of Bujumbura on charcoal, and given the demonstrated potential of an improved imbabura, an assistance is required to build on the Urban Development Project's efforts do disseminate an improved charcoal stove which is more fuel efficient than the imbabura, inexpensive, and adapted to local cooking styles.

5. Consultant's Assignment: Mr. de Lepeleire will carry out his assignment in close collaboration with the IDA Urban Development Project. His contact persons will be Mr. Daniel Niro, project director, and Ms. Perpetue Bwashishima, coordinator of the improved stove program. Mr. de Lepeleire will visit Burundi (Bujumbura) for three weeks beginning April 9, to carry out the field work for the above assignment. He will concentrate on the following activities:

a) an evaluation of the work done to date on improved charcoal stoves in Bujumbura, in particular in the IDA Urban Development Project. He should critically review:

i) the information which is available on the main traditional foods being cooked and their manner of preparation, kitchen technology other than the stoves (sizes, shapes, and materials of the pots and who produces them, where and at what prices), and kitchen practices (number of meals per day, cooking inside/outside);

ii) the available data on fuels being used;

iii) the data which has been accumulated on the traditional and improved stoves being used

(laboratory and field tests on performance, including thermal efficiency, and methods of use by/acceptability to the population, lifetimes, production costs, retail prices, maintenance requirements). This will include determining to what extent, if any, the complaints received on the Urban Project improved stoves are due to an inadequate design;

iv) the production capability (artisanal skills, materials) and strategies to encourage production which have been implemented to date (e.g., training of artisans)

v) the promotional measures and marketing strategies which have been used (cooking demonstrations, retail outlets, targeting of consumers, etc.). This will involve in particular making a judgment as to what extent, if any, the complaints received on the Urban Project improved stoves are due to a faulty delivery system, i.e. an inadequate strategy for marketing and dissemination; and

vi) organizational structure of past and current stove efforts, including management by the Urban Development Project team and contribution of other participants (e.g., the Union of Burundi Women, the Ministry of Women's Affairs).

Based on this review, the consultant should include in his final report on this mission a detailed description of the pertinent information referred to in items (i), (ii), and (iii) above, giving his evaluation of its quality, completeness, and usefulness. He should also briefly describe in his report the charcoal stove programs carried out to date, in particular the stove component of the IDA Urban Development Project, analyzing their basic elements as listed above (background information collected, stove design and testing, production capability and strategy, promotional measures and marketing strategy, organizational structure) and their achievements and shortcomings.

b) On the basis of his analysis of the elements listed under (a) above, Mr. de Lepeleire will propose an integrated program of action for the design, production, promotion, marketing, and quality control of improved charcoal stoves in Bujumbura. This will involve:

i) specifying whether the information gathered to date on cooking in Bujumbura (types of food, kitchen practices, fuels used, etc.) is adequate for pursuing an improved stove dissemination program and, if not, identifying the information which is lacking and describing the effort

required to obtain it (surveys needed and number and qualifications of personnel required to carry them out, equipment needed, technical assistance requirements, etc.);

ii) determining what, if any, work needs to be done on designing improved stoves for Bujumbura (minor modifications of the exiting model, more extensive research and development of new models, etc.). Specifying accordingly the means required to carry out the recommended design work (laboratory facilities and equipment, testing procedures, number and qualifications of personnel, technical assistance requirements, etc.);

iii) recommending means of prompting production, specifically addressing the questions of production units, procurement of construction materials, providing training and incentives to artisans to produce improved stoves, and quality control, regardless of which models will be identified as the most appropriate. 1/;

iv) recommending a strategy for promoting and marketing improved stoves (households for initial promotional work, number of stoves to disseminate, promotion techniques, monitoring of economic and technical performance and acceptability of stoves, training requirements of promoters);

v) analyzing what kind of organization (nature, size, funding) would be needed to manage and implement the recommended program, and the training and other technical assistance required to establish such an organization. In addressing this issue, the consultant should refer specifically to the groups who are or could be involved (the Urban Project unit, the Union of Burundi Women, the Ministry of Women's Affairs, local government officials, etc.), indicating in particular how they could participate more effectively in the dissemination process.

1/ Mr. de Lepeleire should consider the possibility of a joint effort with the project "Workshops for the Intensive Production of Artisanal Products in Burundi", which is currently underway with US$500,000 already allocated by the U.N. High Commissariat for Refugees and managed by the Burundi Center for the Promotion of Industry, with technical assistance provided by UNIDO. The goal of this project is to set up several artisanal workshops producing a variety of goods (school supplies, metalwork, ceramics, toys, basket-work, etc.).

The consultant should establish a schedule according to which this program of action could be carried out, and estimate the program costs. Keeping in mind that the long-term goal of this program is to establish a self-sustaining system for the production of improved charcoal stoves and their dissemination throughout the city, Mr. de Lapeleire should indicate clearly in his report the scale on which the immediate next phase of his action program should be implemented, as it will depend on his evaluation of the work done to date.

Required Output: A Bank staff member will join the mission in Bujumbura on April 28 to discuss with Mr. de Lepeleire his preliminary findings, in particular with respect to the program of action he is to propose, and to participate in the wrap-up meeting with the Directorate of Energy of the Ministry of Public Works, Energy and Mines and with the Urban Development Project unit. Upon completion of the field work (about April 28), Mr. de Lepeleire should prepare and submit to the Bank a draft report describing his findings on the information gathered and the work performed to date, and indicating the action program he recommends.

FORM NO. 27 - OCR
(3/82)

WORLD BANK OUTGOING MESSAGE FORM Cable, Telex

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PAGE 1 OF 1

OFFICIAL DEPT/DIV ABBREVIATION: EGYEA

MESSAGE NUMBER:

TEST NUMBER (FOR CASHIER'S USE ONLY):

START HERE

THE MANAGER, HOTEL PORT VILA INTERCONTINENTAL, PORT VILA, EFATE, VANUATU. FOR YOUR GUEST DR. N. B. PRASAD. RE INDONESIA ENERGY ASSESSMENT STATUS REPORT MISSION. PLEASED TO INFORM YOU THAT GOVERNMENT OF INDONESIA HAS CLEARED THE PROPOSED DATE OF MAY 7-14 FOR THE ABOVE MISSION. AS WE DISCUSSED, MATTHEW MITCHELL WOULD JOIN YOU FOR THIS MISSION. FROM INDONESIA YOU COULD COME TO WASHINGTON TO FINALIZE THE ENERGY ASSESSMENT STATUS REPORT AND FOR THE PREPARATION AND REVIEW OF SOUTH PACIFIC ASSESSMENT REPORTS. WE WILL ORGANIZE TICKETS ETC. ON USUAL BASIS. BEST REGARDS AND HOPE YOUR CURRENT MISSIONS ARE GOING WELL. MASOOD AHMED, ACTING CHIEF, ENERGY ASSESSMENTS DIVISION, WORLD BANK.

END OF TEXT

PINK AREA TO BE LEFT BLANK AT ALL TIMES

INFORMATION BELOW NOT TO BE TRANSMITTED

CLASS OF SERVICE: TELEX TELEX NO.: 1042 DATE: April 3, 1984

SUBJECT: ESMAP-Indonesia-EABR

DRAFTED BY: MAhmed:aaf.

EXTENSION:

CLEARANCES AND COPY DISTRIBUTION:

cc: Mr. Bharier (o/r)

AUTHORIZED BY (Name and Signature): Masood Ahmed, Acting Chief, EGYEA

DEPARTMENT: Energy

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WORLD BANK / INTERNATIONAL FINANCE CORPORATION

OFFICE MEMORANDUM

TO: EGYEA Staff

DATE: April 3, 1984

FROM: Masood Ahmed, Acting Chief, EGYEA

SUBJECT: Divisional Staff Meeting

The agenda for today's meeting (at 3:45 pm in room D-360) will be:

(a) Report on senior staff meetings

(b) Report on China mission - Bob

(c) Report on Liberia mission - Ken/Homayoon

(d) Any other matters

cc: Mr. Rao (EGY)
Mr. Goswami
MAhmed:aaf.

WORLD BANK / INTERNATIONAL FINANCE CORPORATION

OFFICE MEMORANDUM

TO: Mr. Yves Rovani, Director, EGY DATE: April 3, 1984

FROM: Masood Ahmed, Acting Chief, EGYEA

SUBJECT: EEC Contribution to the Assessments/ESMAP

1. Attached please find a copy of a telex from Mr. Hauswirth, Assistant Director General of the EEC, confirming the EEC's interest in contributing ECU 800,000 towards the financing of assessments and follow-up work in selected ACP countries. This telex, the original of which appears to have been lost in transit, is a response to Mr. Dherse's telexes of February 10 and 17 to Mr. Hauswirth on the above subject. As you will note, the specifics of the financing mechanisms proposed in the telex will need to be modified somewhat to fit better with the requirements of the assessment process. However, Mr. Bharier, who has had subsequent discussions with EEC officials last week, is confident that an appropriate modality can be evolved. He recommends that we delay responding to the telex until his return to Washington on Monday, April 9th.

2. Mr. Hauswirth is scheduled to visit the Bank on April 13-16 in connection with the Development Committee meeting and has expressed a desire to discuss this question with Mr. Dherse and ourselves. As Mr. Dherse will return on the 16th, the meeting could be set up for that afternoon. I am arranging a suitable time for an appointment.

Attachment.

cc: Messrs. Dherse (o/r), Weissman, Ludvik (EISVP);
Rao, Bharier (o/r), Kalim (EGY);
Mashler (UNDP, New York)

MAhmed:aaf.

TRANSLATION

ATTENTION MR. JEAN LOUP DHERSE, VICE PRESIDENT, WORLD BANK.

RE: ENERGY COOPERATION IN LDCs. REGARDING YOUR TELEXES OF FEBRUARY 10 AND 17, 1984.

FOLLOWING OUR PAST MEETINGS AS WELL AS TALKS BETWEEN OUR SERVICES ABOUT THE POSSIBILITY OF A COMMUNITY INVOLVEMENT IN THE UNDP/WORLD BANK PROGRAM OF ENERGY ASSESSMENTS, PARTICULARLY IN THE ACP COUNTRIES, WE ARE CONFIRMING THE COMMUNITY'S INTEREST IN CONTRIBUTING FINANCIALLY TO THE CARRYING OUT OF THESE ASSESSMENTS AND ENSUING STUDIES. THE COMMISSION COULD CONSIDER COMMITTING 800,000 ECUS IN 1984 TO THE BENEFIT OF ACP COUNTRIES - THE ALLOCATION IS TO BE DEBITED FROM THE COMMISSION'S OWN RESOURCES (ART. 947). A FIRST TECHNICAL APPROACH HAS BEEN DISCUSSED BETWEEN MESSRS. BHARIER AND LEQUEUX,WITH THE WISH TO PROMPTLY CARRY OUT THESE TASKS IN ACCORDANCE WITH OUR RESPECTIVE ADMINISTRATIVE REGULATIONS.

IN VIEW OF THESE DISCUSSIONS, THE BANK SHOULD PROVIDE THE COMMISSION WITH THE FOLLOWING:

FIRST: SUBMIT TO US THE WRITTEN DOCUMENTS STATING THE GOOD RECEPTIVENESS TO PLANNED ACTIONS OF THE BENEFICIARY ACP COUNTRIES WHICH HAVE BEEN SELECTED ACCORDING TO A SET OF PRIORITIES THAT WERE COMPATIBLE WITH BOTH DEVELOPMENT NEEDS AND OUR FINANCIAL CAPABILITIES. I PROPOSE TO SELECT THE FOLLOWING COUNTRIES FOR A JOINT ACTION: MADAGASCAR, SOMALIA, SWAZILAND, MALI, CONGO, UPPER VOLTA, THE DOMINICAN REPUBLIC, JAMAICÁ, IVORY COAST, AND DJIBOUTI.

SECOND: LET US KNOW AS SOON AS POSSIBLE THE TERMS OF REFERENCE OF THESE ACTIONS AND THEIR ESTIMATED COST IN AS MUCH DETAIL AS POSSIBLE SO AS TO BE ABLE TO PROCEED WITH (i) THE SETTING UP OF THE FINANCING AND (ii) THE ANNOUNCEMENT OF A COMPETITIVE BIDDING INTENDED TO AWARD A SERVICE CONTRACT, THE RECIPIENT OF WHICH WILL BE SUBMITTED TO YOU FOR REVIEW. THE FOLLOW UP OF THIS ACTION, ON THE COMMISSION'S SIDE, WILL BE VESTED IN DIRECTION A (DEVELOPMENT ACTIONS) AND MORE PARTICULARLY IN MR. LEQUEUX MANAGER OF THE ENERGY SECTOR. THE FOLLOW UP WILL BE IMPLEMENTED IN CLOSE COOPERATION WITH OUR DELEGATES IN THE ACP COUNTRIES INVOLVED AND WITH YOUR REPRESENTATIVES.

I HOPE THAT THIS PROPOSAL WILL ENABLE US TO CARRY OUT TOGETHER A VERY USEFUL WORK. MICHEL HAUSWIRTH, DIRECTEUR GENERAL ADJOINT, COMMISSION EUROPEENNE.

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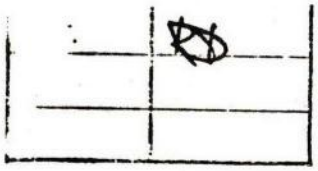

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ATTENTION MONSIEUR PIERINI

ATTENTION M. JEAN-LOUP DHERSE, VICE PRESIDENT - BANQUE MONDIALE

CONCERNE COOPERATION ENERGETIQUE PVD. RVT DES 10 ET 17 FEVRIER 84 FAISANT SUITE A NOS ENTRETIENS PRECEDENTS AINSI QU'AUX DISCUSSIONS ENTRE NOS SERVICES SUR LA POSSIBILITE D'UNE INTERVENTION COMMUNAUTAIRE DANS LE PROGRAMME PNUD/BANQUE MONDIALE POUR L'ETABLISSEMENT DE BILANS ENERGETIQUES, NOTAMMENT DANS LES PAYS ACP, VOUS CONFIRME INTERET DE LA COMMUNAUTE POUR UNE PARTICIPATION FINANCIERE DANS LA REALISATION DE CES BILANS ET ETUDES ULTERIEURES POUR LESQUELS LA COMMISSION POURRAIT ENVISAGER EN 1984 L'ENGAGEMENT DE 800.000 ECUS AU BENEFICIE DES PAYS ACP ET A PRELEVER SUR LES RESSOURCES PROPRES DE LA COMMISSION (ARTICLE 947). UNE PREMIERE MISE AU POINT TECHNIQUE A ETE DISCUTEE ENTRE MM. BHARIER ETLEQUEUX DANS LE SOUCI D'UNE EXECUTION RAPIDE DE CES TACHES CONFORMEMENT A NOS REGLES ADMINISTRATIVES RESPECTIVES. AU VU DE CES ENTRETIENS, LA BANQUE DEVRAIT FOURNIR A LA COMMISSION :

PRIMO : LES PIECES ECRITES JUSTIFIANT LA BONNE RECEPTIVITE DES ACTIONS ENVISAGEES PAR LES PAYS ACP BENEFICIAIRES CHOISIS EN FONCTION DE PRIORITES COMPATIBLES AVEC LES BESOINS DE DEVELOPPEMENT ET NOS DISPONIBILITES FINANCIERES. JE VOUS PROPOSE DE RETENIR AINSI POUR UNE INTERVENTION COMMUNE MADAGASCAR, SOMALIE, SWAZILAND, MALI, CONGO, HAUTE-VOLTA, DOMINIQUE, JAMAIQUE, COTE D'IVOIRE, DJIBOUTI.

SECUNDO : DE NOUS TRANSMETTRE DANS LES MEILLEURS DELAIS LES TERMES DE REFERENCES DE CES ACTIONS ET LEUR COUT ESTIMATIF LE PLUS DETAILLE POSSIBLE EN VUE DE PROCEDER D'UNE PART A LA MISE EN PLACE DU FINANCEMENT ET D'AUTRE PART AU LANCEMENT D'UN APPEL D'OFFRES PREALABLE A LA PASSATION D'UN CONTRAT DE SERVICE DONT L'ATTRIBUTAIRE VOUS SERA SOUMIS POUR AVIS. LA RESPONSABILITE DU SUIVI DE CETTE ACTION SERA ASSUREE, COTE COMMISSION, PAR LA DIRECTION A (ACTIONS DE DEVELOPPEMENT) ET NOTAMMENT PAR M. LEQUEUX, RESPONSABLE DU SECTEUR ENERGIE. SON EXECUTION SE FERA EN ETROITE LIAISON AVEC NOS DELEGUES DANS LES PAYS ACP CONCERNES ET VOS REPRESENTANTS.

ESPERE QUE CETTE PROPOSITION PERMETTRA DE POURSUIVRE ENSEMBLE UN TRAVAIL TRES UTILE.
CONSIDERATION TRES DISTINGUEE.

MICHEL HAUSWIRTH, DIRECTEUR GENERAL ADJOINT COMEU BRU
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