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**Dates:** 01/09/1981 – 12/23/1981

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**ISAD Reference Code:** WB IBRD/IDA STAFF-19-02

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1818 H Street NW

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Masood Ahmed - Chronological File - 1981

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# Record Removal Notice

<b>File Title</b> Masood Ahmed - Chronological File - 1981		<b>Barcode No.</b>  30450190		
<b>Document Date</b> December 1981	<b>Document Type</b> Form			
<b>Correspondents / Participants</b> To: Consultant and secondment Staff Unit From: Masood Ahmed				
<b>Subject / Title</b> Performance Evaluation of Consultant				
<b>Exception(s)</b> Personal Information				
<b>Additional Comments</b>		<p>The item(s) identified above has/have been removed in accordance with The World Bank Policy on Access to Information or other disclosure policies of the World Bank Group.</p> <table border="1"><tr><td><b>Withdrawn by</b> Sherrine M. Thompson</td><td><b>Date</b> November 03, 2022</td></tr></table>	<b>Withdrawn by</b> Sherrine M. Thompson	<b>Date</b> November 03, 2022
<b>Withdrawn by</b> Sherrine M. Thompson	<b>Date</b> November 03, 2022			



→ chron

December 23, 1981

TO: Andres, John, Anwar --

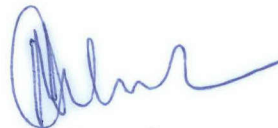
This is the hot-off-the-presses draft of the Sri Lanka report for your review. Two sections are still missing:

- (a) A 5-7 page (single spaced) summary to go in front of the report which I will draft next week once I get your views; and,
- (b) Chapter VI which will be a short description of the investment requirements of the energy sector, the institutional question and the potential for technical assistance. I will draft this over Christmas.

I am sure that this draft could do with a lot of tightening up and I think we need more discussion of the future fuelwood supply/demand balance. Your comments would be much appreciated.

Could we meet next Monday afternoon (around 2:30 ?) to get your input so that I could prepare a white cover for distribution within the Division by New Year's Eve?

Happy Holiday reading!



Masood

Attachment



## OFFICE MEMORANDUM

TO: Mr. Willi A. Wapenhans, EANVP  
(through Mr. A. ~~Cher~~, EA2)

DATE: December 22, 1981

*file*  
*pts 897*  
*trans*  
*- chum.*

FROM: Stephen Schott, Chief, EA2A

SUBJECT: MAURITIUS: Issues and Options in the Energy Sector

*o.k.*  
*12/23*  
*ks*

The attached draft of the above report has now been reviewed within the Bank and discussed with the Government. All GOM comments on the report have been incorporated and this draft has been cleared on Mr. Gulhati's behalf by Mr. Payson. I would be grateful for your approval and clearance for distribution of the report in Blue Cover.

Attachment

cc without attachment: Messrs. Rao, Bharier, Ahmed (EGY)  
Payson (EA2)

MAhmed:ks



MA - chron

Be 12  
Mr. Willi A. Wapenhans, EANVP  
(through Mr. A. Gue, EA2)  
Stephen Schott, Chief, EA2A

December 22, 1981

MAURITIUS: Issues and Options in the Energy Sector

The attached draft of the above report has now been reviewed within the Bank and discussed with the Government. All GOM comments on the report have been incorporated and this draft has been cleared on Mr. Gulhati's behalf by Mr. Payson. I would be grateful for your approval and clearance for distribution of the report in Blue Cover.

Attachment

- Reported Chief of Government  
cc without attachment: Messrs. Rao, Bharier, Ahmed (EGY)  
Payson (EA2)

MAhmed:ks



TELEX

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Date:

12/10/81

72569

Telex No.:

Originators Ext:

12

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START  
1 HERE TO

TO MR. BHEENICK, COPY FOR INFO MR. BAGUANT, MR. J. LABAT.

CITY/COUNTRY

RE ENERGY SECTOR REPORT. WE ARE GRATEFUL FOR YOUR COMMENTS

MESSAGE NO

AND FOR GOVERNMENT'S CLEARANCE OF WHICH PAUL BLAY INFORMED

US. HAVE ALSO RECEIVED MR. LABAT'S LETTER OF NOV 9 WITH  
CEB'S COMMENTS ON ABOVE REPORT. COMMENTS ARE BEING  
INCORPORATED PRIOR TO DISTRIBUTION. HOWEVER, BEFORE  
DISTRIBUTION WE WOULD LIKE TO CLARIFY POSITION REGARDING  
APPLICATION OF FUEL ADJUSTMENT CLAUSE IN ELECTRICITY  
TARIFFS. MR. LABAT'S LETTER INDICATES THAT IN APRIL 1981  
GOVERNMENT SUSPENDED THE AUTOMATIC ADJUSTMENT OF ELECTRICITY  
TARIFFS INSTITUTED TO REFLECT HIGHER FUEL COSTS. WOULD BE  
GRATEFUL IF YOU COULD CONFIRM WHETHER THIS IS INDEED THE  
CASE AND IF SO, WHETHER THE GOVERNMENT HAS ANY FIRM DATE  
FOR REINSTATING AUTOMATIC TARIFF ADJUSTMENT TO REFLECT  
CHANGING FUEL COSTS. APPRECIATE YOUR EARLY TELEXED RESPONSE  
SO THAT FINAL TEXT OF REPORT CAN CLARIFY THIS IMPORTANT  
QUESTION. THANKS AND REGARDS, SCHOTT, WORLD BANK.

END  
OF  
TEXT

## NOT TO BE TRANSMITTED

SUBJECT:

MAURITIUS - Energy Sector

CLEARANCES AND COPY DISTRIBUTION:

cl & cc: Messrs. Bharier, Blay  
cc: Messrs. Erkmen, Devaux, Gilman (INF)

cc: Mr. Razafindrabe  
Mr. Jesseramsing

DRAFTED BY:

MAHMed:yi

AUTHORIZED BY (Name and Signature):

Stephen C. Schott, Division Chief

DEPARTMENT:

EA2DA

SECTION BELOW FOR USE OF CABLE SECTION  
CHECKED FOR DISPATCH

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72569 12/10/81

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12

10

BOOK OF THREE

MR. R. BHEENICK

DIRECTOR OF PLANNING

MINISTRY OF ECONOMIC PLANNING & DEVELOPMENT

PORT LOUIS, MAURITIUS

MR. R. BAGUANT

FINSEC

MINFIN

PORT LOUIS, MAURITIUS

MR. J. LABAT

GENERAL MANAGER

CENTRAL ELECTRICITY BOARD

PORT, LOUIS, MAURITIUS

END  
OF  
TEXT

NOT TO BE TRANSMITTED

SUBJECT: MAURITIUS - Energy

DRAFTED BY: MAHmed:yj

CLEARANCES AND COPY DISTRIBUTION:

AUTHORIZED BY (Name and Signature): Stephen C. Schott, Division Chief

DISPATCH: EA2DA

SECTION BELOW FOR USE OF CABLE SECTION  
CHECKED FOR DISPATCH



December 1, 1981

Julian,

RE: ZIMBABWE White Cover

This is a pretty good report which appears to come up with what are by and large reasonable recommendations. The one worry I have is that many of these recommendations follow a presentational format which is popular in American TV advertising, i.e., the-it-must-be-true, -it-says-so-on-the-package approach to convincing the consumer. In other words, a number of quite important figures and policy recommendations just sort of appear without much of the background substantiation while at the same time there is a whole bank of historical data in the body of the report used to back up the mission's description of the existing situation - something on which I would be much happier to see just statements backed by a statistical appendix. The solution to my mind is to keep to the existing length of the report but substitute some more analysis/numbers substantiating the recommendations for much of the historical data.

Specific areas which need more substantiation/analysis are:

- (i) refinery rehabilitation: one of the main conclusions is that rehabilitation of the refinery to original condition would not be economically optimal, but there is no analysis why this is so. If I remember correctly, Zia's old note on this subject for the Government had a pretty thorough analysis of this, some of which could be used here.

(ii) ethanol: We seem to accept the Government's position on ethanol without question, but the figures show it to be more expensive than the current cost of gasoline imports, which is itself a lot higher than the projected ~~cost~~ cost after the pipeline is rehabilitated. There may be some rationale for this, but it needs to be spelt out.

(iii) coal: The whole discussion of coal is a little bit negative. To refer to "only 2.2 billion tons" of proven reserves at (which is a 1000 yrs/current consumption levels) seems a bit unfair. I would like to see this discussion recast in terms of how coal use can be expanded to substitute other energy sources; what are the likely constraints - relative costs, pricing policy, technical limits, institutional problems, etc., what can be done to resolve these constraints; what would it cost? Also, given this ratio of proven reserves/annual consumption, the emphasis should be on development rather than further exploration. These terms may have been used interchangeably in the report.

- (iv) power: Is the power development program (3-44-45) a reasonable one? Do we have any quantification of the costs of reducing dependence on imported power, which we say is "excessive"? What's the basis for recommending earliest possible connection of lower income urban households to the grid? Does the present system discourage them through high connection charges and the like? Why study rural electrification in the near future if this should only be a long term objective?

Renewables:

Are we sure it makes economic sense to offer fiscal incentives to encourage solar water heater use? Are there likely to be collection or acceptance problems with biogas?

Pricing

There are a variety of price numbers for petroleum products which may need to be reconciled or simplified? Also, this reference to lowering the gap between gasoline and diesel prices to avoid distortions should be substantiated (in a no refinery situation) with some evidence of the occurrence of vehicle fleet distortions or the limits it would impose on ethanol demand. Do we really need a study on fuelwood prices (5.13)?



### Energy Efficiency

This discussion left me a little confused as to whether there were or were not significant opportunities to substitute coal for electricity. Also, we need to provide some background for the estimated cost and savings figures we cite. The aggregate numbers look a bit marginal to me - 160 MW for \$500 million. Then we should assess whether this is a cheaper way of meeting demand than increasing <sup>electricity</sup> / production. A more detailed breakdown would enable the Government to judge which particular conservation measures were of high priority.

### Investment Requirements

What is the basis for these numbers and what is the sectoral composition / <sup>for</sup> future energy investment?

### Presentation

Amalgamate pricing and institutions into the subsector sections; move the first part of future demand up front into the historical overview; move most of the detailed tables to a statistical annex and replace with a couple of summary tables; redefine Zimbabwe's energy problem in 1.03.

Other minor comments are in my marked up copy, which I've given to Zia.

Masood

cc: Trevor, David, Zia (with attachment)



# Record Removal Notice

<b>File Title</b> Masood Ahmed - Chronological File - 1981		<b>Barcode No.</b>  30450190		
<b>Document Date</b> 01 December, 1981	<b>Document Type</b> Form			
<b>Correspondents / Participants</b> To: Consultant and Secondment Staff Unit From: Masood Ahmed				
<b>Subject / Title</b> Performance Evaluation of Consultant				
<b>Exception(s)</b> Personal Information				
<b>Additional Comments</b>		<p>The item(s) identified above has/have been removed in accordance with The World Bank Policy on Access to Information or other disclosure policies of the World Bank Group.</p> <table border="1"><tr><td><b>Withdrawn by</b> Sherrine M. Thompson</td><td><b>Date</b> November 03, 2022</td></tr></table>	<b>Withdrawn by</b> Sherrine M. Thompson	<b>Date</b> November 03, 2022
<b>Withdrawn by</b> Sherrine M. Thompson	<b>Date</b> November 03, 2022			

November 24, 1981

Julian,

The following areas need particular attention.

1. Treatment of the Refinery Problem. This whole issue needs to be recast if it is to be adequately substantiated. The current discussion is based on the implicit premise of maximizing the proportion of domestic petroleum demand that is to be met from domestic refining. The thrust of the analysis is then to minimize the costs of this strategy. This may well turn out to be correct but I do not think that we can assume this and ignore other options such as using the refinery to meet part of the demand and supplementing local production with the direct import of deficit middle distillates. Nor is there any discussion of alternative refinery modification possibilities other than the Shell proposal which appears to have been accepted at face value. If this refinery modification is the most important conclusion of the report - it certainly has enough space devoted to it - it needs better substantiation. Also, we should avoid getting carried away on this which leads to statements such as the one on the first page "The (deteriorating) balance of payments situation has arisen because of a growing imbalance between the product mix of the Mombasa refinery and the pattern of ..... demand." The imbalance may have aggravated the situation but it was caused because petroleum consumption has increased by 35% since 1973 and oil prices have increased ten-fold! Equally dubious is the assumption that fuel oil exports entail losses because they fetch a lower price than crude oil imports. I really can't see the connection at all.



2. Ethanol. As far as I can make out, the IPD report used the wholesale price of gasoline (incl. of tax) as a measure of the benefits from ethanol production. This is clearly wrong and I can't believe that they could have made a basic mistake like this. This needs to be clarified. Also, given the rather negative discussion of the ethanol projects in 1.56, it's a bit disconcerting to see the first element in the recommended technical assistance package in the following paragraph being "finance for investment in blending gasohol as well as in transport and storage facilities" with a review of the entire program added almost as an afterthought.
3. Solar. This analysis seems to hinge on the inappropriateness of the current off-peak electricity tariff for water heating and yet nowhere is a case made for why this is inappropriate. En passant references to changing sources of generation are hardly sufficient. I can postulate a variety of circumstances under which a hydro based system would still benefit from peak/off-peak tariff provision. Again, there may well be merit in this proposal, but it has to be demonstrated. We may not have the answers to do this (I don't think an assessment report is the place for it, anyway) but we should list the right questions.
4. Wood. Eight lines in a 30-page summary is rather cursory treatment for a fuel which supplies 70% of Kenya's energy needs. Are the current efforts adequate to address the problem? How much extra effort is needed? What orders of magnitude of investment in reforestation are required?

5.     Electricity. The discussion of future electricity supply/demand needs to be tightened up considerably. Why should Turkwell be delayed in the first place? Is a coal fired plant in or out of our projections? If we do not have the revised development program (2.31) do we at least know whether these changes were significant or marginal? Is it good enough to say that the development plan is adequate simply because installed capacity exceeds maximum demand in each year? It seems to me that a number of units are coming on at least two years before they need to for capacity purposes but this may be justified because of thermal replacement benefits. If so, we should specify.

6.     Pricing. Virtually no discussion of the costs of electricity supply anywhere. A number of references to competitive costs of UEB supplied power need to be substantiated with some figures. Also, it doesn't follow (4.08) that low income consumers are subsidizing high income ones simply because the former pay a higher unit price for their electricity. How are ex-refinery prices derived in Table 4.2? Why are ex-refinery prices for gasoline so much higher than import parity? Can't we say something ourselves about the effects of the 30% import duty on coal (3.70)? Why doesn't the average selling price for wood fall in a free market if it is resulting in these extraordinary margins (4.16)?

7.     Presentation. This is actually quite a well written report, but it needs to be substantially reorganized. Chapter 1 falls between three stools - self-contained report, summary, chapter on the refinery problem. There is still considerable repetition and at the end of the day, the major issues and recommendations are still not clear.

8.     I have read Dave's comments on this report and agree with most of them. I have also made a number of detailed comments on my marked-up copy which you are welcome to.

Masood

cc: Trevor, Gerry, David

ams.-



Julian Bharier and Masood Ahmed, EGY

Discussions with UNDP on a proposed project for energy policy missions.

1. A considerable portion of our visit to UNDP on November 19 was devoted to a discussion of the proposal by the Society for International Development (SID) for a UNDP-financed global project which would encompass short missions to developing countries by "high level experts" associated with the North-South Roundtable of SID to "provide information and advice to ministers, energy and development planners, and decision makers on the options concerning their energy and national development programs." The subject was first discussed extensively during a 2 1/2 hour meeting with Messrs. Mashler, Harland, Potashnik and Yeganeh. In the afternoon, at Mr. Harland's request, we met with Mr. Wiesbach, the Assistant Administrator of UNDP, who also brought up this question.

2. Mr. Harland informed us that the project concept had first been discussed during the previous week in a meeting between Mr. Morse, the UNDP administrator, and three representatives of the Society for International Development (SID), which sponsors the North-South Energy Roundtable, Messrs. Strong, ul Haq and Iglesias. Subsequently, the secretary of the Roundtable, Mrs. Bani ul Haq, visited UNDP on November 18 to draw up a detailed project document, a copy of which was given to us by Mr. Harland, together with a formal request for our comments. Notwithstanding the fact that the principle of the project had been agreed to by Mr. Morse in his meeting with the SID delegation, all the UNDP staff members we met expressed concern about the scope and concept of the project as envisaged in the detailed project document. They were particularly worried about:

- (i) the extent to which the proposed project would duplicate work already underway through the Joint Bank - UNDP Energy Assessments Program;
- (ii) how the proposed project would fit into the overall follow-up efforts being planned for the energy assessments program, and
- (iii) the extent to which the Bank was associated with this proposal because of the participation of Mr. ul Haq in the initial meeting with Mr. Morse as a member of the Roundtable.

...../



3. Messrs. Mashler and Harland pointed out that the principle objective of the SID project - to discuss energy policy issues and options with high level national decision makers - was one that the energy assessment missions were already supposed to achieve. They asked whether our experience to date had caused us to revise this objective. We confirmed that their understanding of the assessment objectives was correct and reassured them that our experience to date had, on the contrary, been extremely positive. In nearly all of the countries visited under the program, national policy makers of the highest level had taken a close interest in the work of the missions and in their principal recommendations. Some of these recommendations were being implemented even before the final assessment report was sent to the Government, mainly because of the mission's high level discussions in the field and because of subsequent discussions with the Government in the course of related Bank work (SAL preparation, consortia meetings, general economic dialogue, annual meeting discussions, etc.). Therefore, there was also concern about the effectiveness of the type of follow-up envisaged under the SID project. They felt that it was unlikely that an isolated three-day visit by a few high level experts would substantially advance the cause of national energy policies and result in much adjustment to national development strategies to reflect the altered international energy situation.

4. We also agreed with their view that any specific initiative to follow up on the assessments had to be reviewed in the context of the overall follow-up efforts for the program, which had been discussed at various times between the UNDP and ourselves. UNDP was concerned that launching a specific follow-up measure in isolation from these broader efforts could prove counter-productive and confusing for both host governments and other donor agencies who are likely to be substantially involved in this follow up. This confusion was likely to be exacerbated because the UNDP was to be involved in financing both projects and the UNDP resident representatives involved in coordinating both sets of missions. Moreover, the question of potential conflict of interest was also raised because of the other activities of some of the Roundtable experts.

5. UNDP staff indicated their surprise at learning that the proposal had not been discussed in the Bank before it was made. They had assumed that the proposal had the Bank's blessing given the participation of a senior member of the Bank's staff. In line with Mr. Stern's note to you of November 18, we made it clear that the SID proposal was in no way connected with the Bank and that in accordance with standard Bank policy regarding the release of information to private agencies, we would not be able to provide the SID with pre-publication drafts of the assessment reports or any other confidential material on the assessments program. We indicated that Mr. ul Haq was



not associated with this project in his official capacity as Director of the Policy Planning Department, although Mr. Mashler and the others expressed their difficulties understanding this in view of his position in the Bank and the key role played by the Bank in executing the assessments program.

6. Mr. Harland's request to us to review the SID project proposal and to transmit the Bank's official comments on its scope and how it would related to our own energy assessments work was echoed by Mr. Wiesbach when we met him in the afternoon; although his main concern was to ensure adequate coordination between the two projects, as in his view the SID proposal was very likely to go ahead since it had been approved in principle by Mr. Morse.

cc: Messrs. Rovani, Rao, (o/r)

JBharier/MAhmed:ams.-

<b>ROUTING SLIP</b>		DATE: 11/19/81	
NAME		ROOM NO.	
Messrs. Rovani, Rao, Bharier			
	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		<b>URGENT</b>
REMARKS:  Director's Memo on Energy Planning Technical Assistance Projects - Revised to take account of Yves comments of 11/17.			
FROM: M. Ahmed		ROOM NO.: D449	EXTENSION: 74545

DRAFT

MAhmed:ams.-  
Nov. 19, 1981

DIRECTOR'S MEMORANDUM No. 5

TO: All EGY Staff  
FROM: Yves Rovani, Director, EGY  
REF: Technical Assistance Projects in the Energy Sector

1. Now that the Bank-wide energy assessments program is well under-way, we need to turn our attention to the rationalization of another equally important facet of our involvement in the sector, i.e., the arrangements for the provision of technical assistance to member countries in developing and implementing effective national energy planning. This memorandum sets out preliminary guidelines on how we in the Energy Department propose to handle this activity in the future. Their one overriding objective is to ensure that the technical assistance we finance is subjected to the same exacting standards for preparation, appraisal and supervision that we require of our hardware projects. This in turn implies that we adhere to four basic principles.

2. First, the need for technical assistance and the scope and form it should adopt must be clearly demonstrated before we agree to finance it. The energy assessment reports provide the best vehicle for this definition but occasionally this could stem from our operational activities in the various energy subsectors.



3. Second, I believe that the most effective medium for providing consistently high-quality technical assistance to the energy planning efforts of member countries is through the framework of free standing technical assistance projects. The principal objective of these projects will be to formulate a coherent national energy strategy, to define the magnitude and sequence of investments associated with the implementation of this strategy and to bring about a commensurate strengthening in the institutional capability for managing energy sector investment and policies. To achieve these objectives the project may include some or all of the following components depending on specific country requirements and the nature of complementary efforts by other agencies:

- (a) Establishment of an appropriate organization;
- (b) Data development;
- (c) Demand forecasting;
- (d) Market surveys;
- (e) Distribution studies;
- (f) Training of planners;
- (g) Resource surveys;
- (h) Pricing studies;
- (i) Conservation activities; including energy audits and end-use efficiency surveys;
- (j) Rural energy surveys, and
- (k) Preparation of short, medium and long term energy plans and contingency plans.

4. Third, the responsibility for the preparation, appraisal and supervision of these projects must be clearly allocated to a core of staff who view this work as their principal responsibility and are able to devote an adequate amount of time to it. This is the philosophy that we have followed in developing the Bank's energy assessment program and it is a philosophy which is working. Naturally, this core of staff will need to rely heavily on specific subsector inputs from the operational staff working in petroleum, power, coal, refineries, fuelwood and ethanol as well as the main energy consuming sectors; but they will provide the coordinating and integrative element which is an essential component of this work.

5. On rare occasions we may still need to finance technical assistance components rather than free standing projects because the amounts involved are too small. However, even where this is the case, we should conceptually treat the energy planning component as a sub-project and the responsibility for its preparation, appraisal and supervision will still rest with the specialized core staff for this work.

6. The fourth principle is that we must recognize and make explicit allowance for the high manpower requirements of these projects in relation to their dollar volumes. In this feature they resemble our petroleum exploration promotion projects and, like the latter, the benefits from this

technical assistance will accrue much further down the line as they enable the country to prepare a whole stream of bankable investment projects that reflect overall sectoral priorities. Consequently, we must ensure that we have been allocated the necessary resources to do this job well before we accept the responsibility to do it.

7. To facilitate the implementation of these general principles, the Department's work will henceforth be guided by the following specific criteria:

- (i) In future, the Energy Department will only provide technical assistance to member countries for developing and implementing effective national energy planning through the framework of free standing technical assistance projects.
- (ii) Appraisal and supervision of these projects will be the responsibility of the Energy Assessments Division.
- (iii) These projects will only be undertaken in countries where the need for such a project, as well as its scope and focus, has been identified by an energy assessment mission. If we receive a request for such a project from a country where an assessment has not yet been undertaken, we would carry out such an assessment jointly with the preparation/appraisal of the project.



- (iv) Where the size of the project for technical assistance identified in the assessments report is so small that a free-standing project is not feasible, it may be included as a component in another project. However, this component will be treated separately, fully appraised and properly supervised under the responsibility of the Energy Assessments Division. The allocation of additional resources for this task, over and above the resources for the overall project, will be an essential prerequisite for the inclusion of such a component.
- (v) Studies such as reservoir studies, sub-sector management studies, etc., which are directly related to project design, implementation or the preparation of future sub-sector projects should continue to be included in petroleum and power projects and the relevant project officers should continue to prepare, appraise and supervise them as part of their normal responsibilities. Certain types of studies - such as marginal cost pricing studies for power, inter-product pricing studies for petroleum; refinery strategy studies, etc. - are important both from a sectoral point of view and at the project level. The appropriate vehicle for carrying out these studies and the responsibility for their management will be decided on a pragmatic, case-by-case basis depending on a number of criteria such as whether a technical assistance project is under preparation in the country, where the greatest staff expertise lies, which agency in the country will carry out the work, etc.

- (vi) In exercising our CPS review function for energy related projects managed outside the Department.
  - (vii) The status of energy planning components in existing petroleum projects will be reviewed on a case-by-case basis and supervision responsibility will be allocated within the Department.
8. The Assistant Director, Energy Policy and Assessments, will be responsible for monitoring the implementation of these guidelines and for modifying them as appropriate in the light of our evolving experience. He will also arrange for the review of existing energy planning components in EGY-managed projects (para. 7, vii above) and coordinate our review input into projects managed outside EGY (para. 7, vi above). Once this new system is fully operational with the Department, I will discuss our proposals with our Regional colleagues and with the Bank's senior managers with a view to their Bank-wide application and to establishing effective links between this work and other Bank activities such as SAL's.

<b>ROUTING SLIP</b>		DATE: Nov. 16, 1981	
NAME		ROOM NO.	
Messrs. Rovani, Rao, Bharier			
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		<b>URGENT</b>	
REMARKS:  Revised version of the draft memorandum on technical assistance projects which has abbreviated discussion of the general principles and incorporates the specific guidelines that were drawn up later.			
FROM: Masood Ahmed		ROOM NO.: D-449	EXTENSION: 74545



DRAFT

MAhmed:ams.-  
Nov. 16, 1981

DIRECTOR'S MEMORANDUM No. 5

TO: All EGY Staff  
FROM: Yves Rovani, Director, EGY  
REF: Technical Assistance Projects in the Energy Sector

1. Now that the Bank-wide energy assessments program is well underway, we need to turn our attention to the rationalization of another equally important facet of our involvement in the sector, i.e., the arrangements for the provision of technical assistance to member countries in developing and implementing effective national energy planning. This memorandum sets out preliminary guidelines on how we in the Energy Department propose to handle this activity in the future. Their one overriding objective is to ensure that the technical assistance we finance is subjected to the same exacting standards for preparation, appraisal and supervision that we require of our hardware projects. This in turn implies that we adhere to four basic principles.

2. First, the need for technical assistance and the scope and form it should adopt must be clearly demonstrated before we agree to finance it. The energy assessment reports provide the best vehicle for this definition but occasionally this could stem from our operational activities in the various energy subsectors.

3. Second, I believe that the most effective medium for providing consistently high-quality technical assistance to the energy planning efforts of member countries is through the framework of free standing technical assistance projects. These projects may include assistance in one or more of the following areas:

- (a) Establishment of an appropriate organization;
- (b) Data development;
- (c) Demand forecasting;
- (d) Market surveys;
- (e) Distribution studies;
- (f) Training of planners;
- (g) Resource surveys;
- (h) Pricing studies;
- (i) Conservation activities; including energy audits and end-use efficiency surveys;
- (j) Rural energy surveys; and
- (k) Preparation of short, medium and long term energy plans and contingency plans.

4. Third, the responsibility for the preparation, appraisal and supervision of these projects must be clearly allocated to a core of staff who view this work as their principal responsibility and are able to devote an adequate amount of time to it. This is the philosophy that we have followed in developing the Bank's energy assessment program and it is a philosophy which is working. Naturally, this core of staff will need to rely heavily on specific subsector inputs from the operational staff working in petroleum, power, coal, refineries, fuelwood and ethanol



as well as the main energy consuming sectors; but they will provide the coordinating and integrative element which is an essential component of this work.

5,           On rare occasions we may still need to finance technical assistance components rather than free standing projects because the amounts involved are too small. However, even where this is the case, we should conceptually treat the energy planning component as a sub-project and the responsibility for its preparation, appraisal and supervision will still rest with the specialized core staff for this work.

6,           Finally, we must recognize and make explicit allowance for the high manpower requirements of these projects in relation to their dollar volumes. In this feature they resemble our petroleum exploration promotion projects and, like the latter, the benefits from this technical assistance will accrue much further down the line as they enable the country to prepare a whole stream of bankable investment projects that reflect overall sectoral priorities. Consequently, we must ensure that we have been allocated the necessary resources to do this job well before we accept the responsibility to do it.

7,           To facilitate the implementation of these general principles, the Department's work will henceforth be guided by the following specific criteria:

- (i)   In future, the Energy Department will only provide technical assistance to member countries for developing and implementing effective national energy planning through the framework of free standing technical assistance projects.

- (ii) Appraisal and supervision of these projects will be the responsibility of the Energy Assessments Division.
- (iii) These projects will only be undertaken in countries where the need for such a project, as well as its scope and focus, has been identified by an energy assessment mission. If we receive a request for such a project from a country where an assessment has not yet been undertaken, we would carry out such an assessment jointly with the preparation/appraisal of the project.
- (iv) Where the size of the project for technical assistance identified in the assessments report is so small that a free-standing project is not feasible, it may be included as a component in another project. However, this component will be treated separately, the responsibility for it will lie with the Energy Assessments Division, and resources will be allocated for it over and above the resources for the overall project.
- (v) Studies such as reservoir studies, sub-sector management studies, etc., which are directly related to project design, implementation or the preparation of the next identified project in a sub-sector can continue to be included in petroleum and power projects. The responsibility for the preparation, appraisal and supervision of such studies will continue to rest with the sub-sector operational staff. However, if an energy planning technical assistance project exists or is under preparation, other types of studies, such as pricing or market studies should be incorporated in this project.

(vi) All projects appraised outside the Energy Department which have an energy planning component will be referred to the Assistant Director, Energy Policy and Assessments, who will be responsible for coordinating the Department's inputs into the preparation of these projects.

(vii) The status of energy planning components in existing petroleum projects will be reviewed on a case by case basis and supervision responsibility will be allocated within the Department. The Assistant Director, Energy Policy and Assessments, will be responsible for conducting this review with the chiefs of the Assessments Division and the Petroleum Projects Division concerned.

8. As we begin to implement this new system, we may want to modify these guidelines in the light of our experience and I will be glad to receive your views and suggestions in this regard. Following that, I will discuss our proposals with our Regional colleagues and with the Bank's senior managers with a view to their Bank-wide application and to establishing effective links between this work and other Bank activities such as SAL's.



November 18, 1981

Mr. A. E. Bailey  
Longfield House, The Street  
Lower Taysburgh, Norfolk  
England

Dear Bill,

Further to our telephone conversation, I am happy to attach the used airline tickets which you requested. I hope these are of some help to you.

I am also attaching for your reference a copy of the Malawi Issues Paper, which has been very well received. If you have any comments on this please call me or send a note. In due course I will send you a copy of the full report, which Gerry is working on now.

Hope you have a good holiday in Australia.

Best regards,

Masood Ahmed  
Energy Department

Attachments.-

MAhmed:ams.-



November 18, 1981

Mr. Malcolm Alexander  
British Mining Consultants Limited  
Burleigh House  
101-145 Great Cambridge Road  
Enfield, Middlesex EN1 14Q  
United Kingdom

Dear Malcolm:

Further to my letter of October 3, 1981, here are a few specific questions which have been raised on your report:

First, as far as the Ngana coalfield is concerned, is there a possibility that this coalfield could have an upper and a lower zone of coal as is the case for the Songive-Kiwira coalfield five miles to the north in Tanzania? Has any work been done on testing the potential of this lower zone, which is considered the better prospect in Songive-Kiwira? Are there any plans for such work?

You cite the Lufira area as being promising, but make no recommendation for further work in this area (page 18, para. 6). Should the geological survey begin to do some work in Lufira, possibly at the expense of limiting their ongoing work in Ngana? Related to this is the whole question of what their future work programme should be. I think we all agree that the current exploration programme is unlikely to yield substantial results unless it is upgraded with technical or financial assistance. The other alternative, of course, is for them to cease this work altogether. Do you have any recommendations to make on this?

Finally, one specific question relates to your suggestion that seismic geophysical methods would be more useful than drilling (page 18, para. 7). Could you elaborate further on this?

I would appreciate your comments on these points.

Sincerely yours,

Masood Ahmed  
Energy Department

bcc: Messrs. Dyson (IPD), Reese (EAL); Collins (EGYEA)  
MAhmed:ams,-

Mr. Yves Rovani, Director, EGY

November 5, 1981

Julian Bharier, Acting Chief, EGYEA

SRI LANKA: Meeting on Energy Assessment Mission's Issues Paper

1. Masood and I met yesterday afternoon with Alphonse Shibusawa and other members of the Programs Division to discuss the Post Mission Issues Paper which had been prepared by the recent Energy Assessment Mission. Also present at the meeting was Mr. T. Gibson who covers Sri Lanka for the Fund and who had been sent a copy of the Issues Paper by the Programs Division.

2. Alphonse was highly complimentary about the paper. He endorsed nearly all of the mission's recommendations and made a couple of very useful comments on the institutional questions raised by the mission and on the issue of electricity tariffs. He also pointed out that a number of the mission's recommendations had already been accepted by the Government following their discussions in the field and subsequent discussions held in Washington with visiting Sri Lankan officials. In particular, in his view the mission had been instrumental in getting the Government to reinsert an important proposed IDA forestry project into the public investment program for FY83; in reducing the proposed investment in short term thermal generating capacity to a level consistent with more realistic electricity demand forecasts; and in introducing the whole concept of energy conservation and demand management into Government thinking for the sector.

3. He also informed us that the Region and the Government were eagerly awaiting the full assessment report which should be out in white cover this month. Mr. Gibson also indicated the Fund's interest in receiving a copy of the report to assist them in formulating their overall country strategy.

cc: Mr. D. C. Rao, EGY

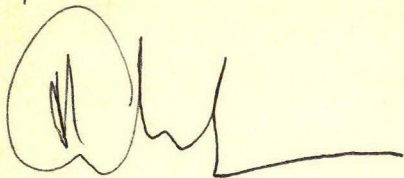
MAhmed:ams.--



→ File - Chron.

Draft Text on energy  
for Mr Clausen's briefing  
book for Malawi visit.

Given to G. Reese  
on 11/3/81.

A handwritten signature in dark ink, featuring a large, stylized initial 'A' or 'W' followed by a long, horizontal, slightly wavy line extending to the right.

## ENERGY

1. Malawi's fuel import bill, mainly petroleum products, doubled between 1977 and 1980 and now absorbs 20% of the country's export earnings. Periodic petroleum supply interruptions have caused serious dislocation to the country's economy. The main cause of these have been disruptions and bottlenecks in Mozambique's rail transport and ports of Ncala and Beira, but the problem has been exacerbated by the inadequate existing institutional framework for energy sector management within the country. Strengthening this framework to develop an effective national energy planning capability is one of the highest priorities for Government action.
2. The other main issue in the energy sector is the continuing diminution of Malawi's fuelwood resources which supply over 60% of the country's energy needs. The tobacco industry accounts for 40% of total fuelwood use and improving the efficiency with which fuelwood is used in this industry offers the greatest single potential for conserving this dwindling resource. Some work is being done on this area but much more needs to be done and greater Government support for this work is required.
3. The Bank sent an energy assessment mission to Malawi in September 1981 which identified the two issues raised above as requiring the most urgent Government attention. The Bank has also been involved in the sector through financing a fuelwood project and the Ncala B hydroelectric project. During the annual meetings, the Finance Minister requested Bank assistance in financing an EEC proposed strategic fuel reserves project. Mr. Wapenhans answered that the Bank would review the proposed project in the context of our assessment mission's findings. We expect to receive the project proposal in December 1981.

## OFFICE MEMORANDUM

Chron.

TO: Mr. D. G. Reese, Division Chief, EAL

DATE: November 2, 1981

FROM: Julian Bharier, Acting Chief, EGYEA

SUBJECT: MALAWI: Energy Assessment Mission

1. Attached please find the Post-Mission Issues Paper for the above mission. All comments on this paper should be sent to Mr. Masood Ahmed (D-449, x74545) by cob Monday, November 9, if possible. I would also be grateful if your office could arrange for a regional review meeting next week to discuss the paper and review the mission's preliminary recommendations. At that meeting we could also discuss the context and focus of the energy sector briefing note for Mr. Clausen's forthcoming visit to Malawi.

cc: Messrs. Wapenhans, Gulhati, Ducker, (EANVP);  
Adler, Bronfman, Erkmen, Eccles, Tuncay, Shaukat, (EAP);  
Kraske, Yenai, Hall, King, (EAL)  
Ridker, (PPR);  
Spears, (AGR);  
van der Tak, (CPSVP);  
Garg, (PAS);  
Chatelin, (TWT);  
Kohli, Strongman, (IPD);  
  
Rao, (EGY);  
  
Ms. Haug (IPD);  
Effron, (EAP);  
Julius (EGY);

Energy Assessment Division staff

MAhmed:ams.-



## MALAWI

### ENERGY ASSESSMENT MISSION

#### Back-to-Office Report & Issues Paper

#### I. INTRODUCTION

1. An energy sector assessment mission comprising Messrs. M. Ahmed (Mission leader, Economist), G. Collins (Energy Planner), P. Hall (Loan Officer), B. Bailey (Power Specialist, consultant) and M. Alexander (Coal Specialist, consultant) visited Malawi from September 7 to September 23, 1981.<sup>1/</sup> The mission was undertaken in accordance with the scope and objectives set out in the Pre-mission Issues Paper of August 28, 1981 and subsequent terms of reference dated September 2, 1981. In its coverage of rural and renewable energy issues, the mission liaised in the field with a USAID consultant, Mr. T. Graham.<sup>2/</sup> The mission met with the UNDP Resident Representative, Mr. R. Borthwick, at the beginning and the end of our stay and briefed him on our principal findings and conclusions. We also appraised the representatives of the major bilateral and multilateral donors on the mission's objectives and scope.

2. Within the Government, the main counterpart staff for the mission was provided by the Economic Planning Division which had set up a four-man team to collect background data and information prior to the mission's arrival and whose members joined the mission for most of its meetings and field visits. The mission also had extensive discussions with staff of the Ministries of Finance, Industry, Forestry and Natural Resources, Agriculture; the Departments of Energy and of Statutory Bodies; the major parastatal and private energy supply agencies -- ESCOM, OILCOM, etc., and the main research and development bodies active in the energy sector -- the National Research Council, the University of Malawi, the Tobacco Research Council, the Tea Research Center. On the demand side, we undertook field visits to about a dozen of the largest energy consumers in the country. A complete list of the persons met by the mission is attached as Annex I.

3. This memorandum sets out the mission's principal findings and preliminary recommendations. These findings were discussed with the Government

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<sup>1/</sup> Mr. Alexander from September 12 to 25.

<sup>2/</sup> Mr. Graham will contribute a section on this area for the Energy Assessment Report. For further background on the collaboration with USAID, please refer to the Pre-mission Issues Paper.

in a series of wrap-up meetings with Messrs. G. Kalinga (Senior DPS, Finance), L. Msiska (PS, Statutory Bodies) and members of the Economic Planning Division. Subsequent to the Mission's return to Washington some of these issues were discussed informally with Mr. Y. Bobe, the Government's Chief Economist, who was here in connection with the Annual Meetings. All these officials reacted positively to the mission's findings and endorsed its principal recommendations.

## II. BACKGROUND

### Country Situation

4. Malawi is a poor, landlocked country with a population of 5.7 million which is almost entirely rural and rapidly growing. Agriculture dominates the economy, accounting for 43% of GDP, 85% of the labour force and almost all of the country's exports. Malawi's main natural resources are a good supply of water, moderately fertile land and a climate which is favourable for crop production. Unlike its neighbors, Malawi does not have substantial mineral resources.

5. Since independence in 1965, the country has made significant progress both in terms of growth -- between 1967 and 79, per capita income grew at about 3.0% p.a. -- and in meeting the educational, health and other basic needs of the population. Over the last three years, however, this situation has altered dramatically primarily because of a 35% fall in the country's external terms of trade. Export prices have fallen, particularly for tobacco which provides over half of export earnings, and the cost of essential imports, including petroleum, has continued to rise. The fuel import bill more than doubled between 1977-80 and the share of the export earnings devoted to these imports increased from 13% to 21% over the same period. The current account deficit has widened to about 15% of GDP and there has been a sharp fall in official foreign exchange reserves despite substantially increased foreign borrowing from the IMF, the Bank and other agencies. To stem this deterioration the Government has initiated a number of short term demand management measures in consultation with the Fund and, more recently, it has embarked upon a program of structural adjustment supported by a \$45 million SAL from the Bank. A mission to review progress on this program and to prepare for a possible second SAL operation is in the field now. The Government's energy policy is expected to be a major focus of the proposed SAL II.



### Energy Consumption

6. Malawi's energy needs are met from five sources: Imported petroleum products (12%), imported coal (4%), hydroelectricity (15%), fuelwood (64%) and bagasse and other agricultural wastes (5%).<sup>1/</sup> Industry, including tobacco processing, is the main energy user accounting for 40% of the petroleum consumption, 70% of electricity sales, nearly all of the coal imports and, more surprisingly, over 40% of the estimated fuelwood demand. Direct household use of energy for cooking and lighting is focused on two fuels: Electricity (16% of total sales) and fuelwood (half of total demand). Kerosene use by households is very small and declining, although there may be some unreported consumption in the areas bordering Zambia and Tanzania where retail kerosene prices are substantially lower. The transport sector accounts for 55% of the 160,000 toe's of petroleum product consumption.

7. Over the last decade in electricity consumption has grown at an average annual rate of 11% and the consumption of hydro carbons (petroleum and coal) at about 4%. However, for all fuels the second half of the 1970's has been quite different from the first. Petroleum product consumption growth fell from around 7% p.a. for the period 1970-73 to about 1.5% p.a. for the rest of the decade and kerosene demand in particular dropped by 60% primarily in response to higher prices. By contrast, the use of coal received a sharp boost from higher oil prices. After years of relative stability, coal imports began to grow after 1973 and virtually doubled by 1980, although they are still small (60 - 70,000 tons) in absolute terms. Electricity sales also tapered off in the second half of the decade from 15% p.a. during 1970-75 to 8.4% p.a. in 1975-80, but this was more a reflection of the general slowdown in economic activity than a direct response to higher prices.

### III. MAJOR ISSUES, FINDINGS AND RECOMMENDATIONS

8. This section presents a preliminary discussion of the main issues facing the Government of Malawi in the energy sector. They are grouped in eight categories as follows:

- (A) Petroleum.
- (B) Electric Power.
- (C) Coal.
- (D) Fuelwood & Other Renewables.
- (E) Pricing.
- (F) Efficiency of Energy Use.
- (G) Interfuel Substitution Possibilities.

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<sup>1/</sup> These estimates are based on differential end use efficiencies for these fuels in the various consuming sectors. While these efficiencies are average approximations and subject to a margin of error, they provide a better perspective on the energy supply mix because of the substantially lower average efficiency of firewood use and the high proportion of total energy supplied from this source.



(H) Institutions.

A. PETROLEUM

(i) Supply

9. The mission's arrival in Malawi coincided with a serious nationwide gasoline shortage which persisted for over a week and was only alleviated through the purchase of emergency supplies from Zambia at a landed cost (at Blantyre) of \$2.60 per gallon, which is nearly twice the price paid under normal circumstances for gasoline imports through Mozambique. In this particular instance the shortage had been caused by an unfortunate combination of procurement delays on the part of one oil company and the borrowing of another company's stocks at Beira by the Mozambique National Petroleum Company. But periodic petroleum supply interruptions are not a new phenomenon for Malawi and their more usual cause has been transport bottlenecks in Mozambique. These in turn have stemmed from both operational problems at the ports and on the railways and from the poor physical condition of the railway lines from Beira and Nacala to Malawi. Recent developments suggest that there has been some improvement in regard to the first of these problems but the second more intractable issue -- the poor condition of the physical infrastructure -- is likely to remain a major constraint to the smooth inflow of petroleum and other imports into Malawi.

10. The Government is rightly concerned about this issue and has recently commissioned, with EEC assistance, a comprehensive consultant study to examine the various options that are open to it in resolving this problem. Inter alia, these include:

- (a) augmenting the existing commercial storage capacity in the country -- approximately 20 to 28 days supply -- through the development of additional strategic storage reserves whose optimum size has yet to be defined;
- (b) entering into a regular supply contract with an alternative source such as Zambia to supplement and diversify the existing supply through Mozambique; and,
- (c) attempting to streamline operations further on the existing supply route and developing a contingency allocation mechanism for drawing down existing commercial storage in the event of supply interruptions.

11. A full analysis of these options must await the results of the ongoing consultant study, a first draft of which is expected in November and which the Government has agreed to provide to the Bank in time for the results to be incorporated into our own Energy Assessment Report. Nevertheless, a number of points can be made now. First, quite apart from the high cost involved in holding strategic storage reserves, there is the practical problem that it would be extremely difficult to fill them through utilization of the Mozambique route which can barely carry enough petroleum to meet the existing level of consumption. Secondly, there is the more basic question of what type of supply interruption these strategic reserves are intended to counter. Fairly short interruptions -- a week to ten days or so -- caused by



derailments and other similar problems can probably be taken care of simply by ensuring that the existing commercial storage capacity in the country is kept filled, which has not always been the case in the past. In the event of longer, more permanent disruptions to the supply system the value of strategic reserves would really be to provide a breathing space within which alternative arrangements could be worked out. The question here is to assess the probability of such a disruption occurring and of weighing the costs of holding reserves in anticipation of such an event against the other alternatives.

12. In terms of the diversification of supply, the most frequently mooted alternative source is Zambia which, although it is also a landlocked country, has its own refinery and a crude pipeline to the coast. The constraints here are a much higher ex-refinery price, the need to transport these products over a longer distance and by road instead of rail, and the likelihood that the product mix offered by the Zambians would be determined as much by the production slate of the Ndola refinery as by the particular requirements of Malawi.

13. Finally, the third option set out above -- streamlining the existing supply operation -- is really one which should be pursued in any event. To do this two issues need to be resolved. First, the relationship between the oil companies and Malawi Railways is unsatisfactory and the level of their day-to-day coordination is poor. They view each other as adversaries rather than integral parts of the same chain of supply. This situation needs to be changed urgently. Second, and this is to a large extent the root of the problem, there is no one in Malawi who is charged with the responsibility of ensuring an uninterrupted flow of petroleum supplies into the country. The oil companies periodically send statistics on the level of inland stocks to the Energy Department in OPC, but there is no evidence that the Department uses these figures for planning purposes. Nor is there any mechanism in place which would alert the three main actors -- the oil companies, the Railways and the Government -- to a potential crisis in the event that product stocks fall to a dangerously low level.

#### Recommendation 1

14. As mentioned in para. 10 above, these questions are currently being studied in detail by consultants and the mission's final recommendations on this subject will be made after the consultant's report is received in December. However, the following recommendations can be made now:

- (a) The Government should urgently attempt to improve coordination between the oil companies and Malawi Railways through the institution of a standing committee on petroleum supply which would include the representatives of these agencies and of the Government and which would meet at regular and frequent intervals.
- (b) A formal "alert" mechanism needs to be formulated which would be triggered whenever the combined stocks of any product at the port or in the country fell below a certain pre-specified level. OILCOM, the national oil company, which controls 60% of the market, and already acts as an informal industry spokesman,



should be charged with the responsibility of administering this mechanism and informing the other member of the standing committee as soon as the mechanism is triggered.

(ii) Domestic Exploration

15. Malawi's hydrocarbon potential has traditionally been considered to be poor. However, two recent developments suggest that there may be some grounds for optimism but it is still too early to judge. First, earlier this year a team of academics from Duke University in the United States, carried out a seaborne seismic survey of parts of Lake Malawi which led them to suggest that there were possible natural gas and oil deposits under the lake bed. The results of this work are not yet available and its main objective was not to find hydrocarbon deposits, so the importance and reliability of this information should not be exaggerated at this time. The second development is the interest shown by Shell Oil in doing geophysical work in the lower Shire Valley and on parts of the lake. Again little concrete information is available at this stage but the mission was told that Shell have obtained a commodity exploration survey licence and intend to carry out an airmag survey and some limited groundwork towards the end of this year.

16. These are encouraging signs but at this early stage they warrant cautious treatment. Even if limited hydrocarbon deposits are proven, their commercial development would entail substantial practical difficulties and high costs because of the landlocked nature of the country and the depth of Lake Malawi.

Recommendation 2

17. The mission fully endorses the sensible wait-and-see attitude of the Government. The situation should be reevaluated early next year when the results of both the Duke University survey and the proposed Shell exercise are available. If these are positive, the Government may require assistance in developing an appropriate hydrocarbon exploration strategy which the Bank should be prepared to provide if asked.

B. ELECTRIC POWER

18. Per capita electricity consumption has increased sixfold in the last 17 years from 10 Kwh in 1963 to about 64 Kwh in 1980 but it is still one of the lowest in the world and less than 2% of the country's population has access to electrical service. Malawi's electric supply system is currently based almost entirely on the hydro potential of the Middle Shire River. As of September 1981, the country's installed hydroelectric capacity was 124 MW with some 8 MW of diesel generating plant and a 15 MW gas turbine generating unit (installed in 1976 as a peaking unit) remaining. This thermal plant is now held purely as emergency standby. An additional 20-25 MW of private industrial generating plant is also in use outside the public supply system. Nearly half of this is run on bagasse in the sugar industry and the rest is largely oil-based although there are one or two mini-hydro units on the tea estates.

19. Power Development. The most important question affecting the future development of the power sector is the uncertainty surrounding a proposed



fertilizer project which would employ a relatively uncommon electrolytic process to produce nitrogenous fertilizer. The attractiveness of this process and indeed the economic viability of the project itself rests on its theoretical capability to use mainly cheap off-peak power by substantially varying its power demand during the course of the day. Initial project studies had envisaged an off-peak demand for the project of 60 MW which would be reduced to about 7 MW during the on-peak periods. However, there is considerable uncertainty about whether such a large degree of variation could actually be achieved in practice. ESCOM maintains that the project's on-peak demand is more likely to be in the range of 25-30 MW which would significantly alter the project's impact on the country's electrical system and also its project's own viability.

20. To resolve these questions, the Government is commissioning (with Bank assistance) a final set of short consultant studies which will determine the optimal variation in the project's power demand, the implications of this variation for the associated economic cost of power supplied to the project and the effect that this in turn will have on the economic viability of the project. On the basis of these studies, the Government is expected to decide on whether and when to go ahead with the implementation of the project. These studies are currently scheduled to be completed by spring of next year. Given this uncertainty, the Assessment Report will analyze the development of the power sector in two scenarios, with and without the fertilizer project.

21. The second question in the power sector is selection of the right alternative for the generation development to follow completion of the Nkula hydroelectric scheme. Malawi's power generation expansion program is based entirely on continued development of the Middle Shire River. There was no flow in the Shire River between 1915 and 1935 due to the low level of the lake during that period and, while the possibility of this happening again is much less likely due to the regulation at the Liwonde Barrage, the probability of a significant reduction in flow cannot be entirely ruled out and has been quoted as one in eighty years. In the interest of future security of supply, it would be prudent to consider diversification away from this area when planning future expansion of capacity.

22. Under the current program, the next hydro project that is scheduled for construction after Nkula C is Kapachire also on the Middle Shire. An alternative to this project would be Fufu Falls on the South Rukuru River in the Northern Region which is in an entirely different hydrological area. However, because of the limited work done to date on the Fufu project, it can only be considered a feasible alternative to Kapachire if the fertilizer project is canceled or delayed in which case the next major hydro development would not be required until 1990. If Kapachire has to be constructed earlier because of the fertilizer project,<sup>1/</sup> preparatory work on Fufu should still begin to enable its consideration as an alternative for the subsequent

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1/ Preliminary analysis suggest that the commissioning in 1985 of a Fertilizer plant with an on peak demand of 25 MW and an off peak demand of 60 MW would necessitate the bringing forward of Kapachire to 1987.



project. The choice of alternative projects for the 1990's is limited by the fact that the identification and ranking of potential hydro sites outside the Middle Shire basin has received little attention in the past. Given the long lead time required to collect reliable hydrological data, the Government should soon initiate a systematic survey and ranking effort for these sites to better assess the country's overall hydro potential. Another alternative which should also be borne in mind for the 1990's is the possibility of importing power from the Caborra Bassa Scheme in Mozambique. While there are obvious political and security considerations that make this an unlikely candidate for immediate development, these factors could change during the decade and this project could well be part of the least-cost development program for the 1990's.

### Recommendation 3

23. The mission endorses the need to urgently resolve the future of the proposed fertilizer project which is currently subjecting power sector planning to an excessively high degree of uncertainty. The mission also recommends that in the interest of security of supplies, ESCOM's planning for the development of future generating capacity should consider some diversification away from the Middle Shire River. Fufu Falls in the Northern Region is one alternative area for development and a feasibility study of the potential project should be carried out. The Government should also initiate a survey and ranking study for other potential hydro sites outside the Middle Shire area.

### C. COAL

#### (i) Imports

24. Malawi currently imports about 55,000 tonnes of coal per year primarily from Mozambique and South Africa but also in small quantities from Zimbabwe and Zambia. Over 90% of this coal is used as industrial fuel with two firms (Portland Cement and David Whitehead Textiles) accounting for over half of total consumption and about twenty smaller industrial users accounting for the rest. In recent years coal imports have been subject to the same type of logistical difficulties that have characterized the supply of petroleum. However, in this case the worst effects of this problem have been alleviated by the work of the Coal Users Committee, an association of all the known users except for Portland Cement, which has organized the import, distribution and allocation of coal supplies since 1978. Both small and large coal users appear to be generally satisfied with the way that the Committee has been operating, although some elements in the Government believe that it would be better to revert to the pre-1977 system of independent suppliers importing and selling coal to individual users. In the mission's view there is little to be gained from enforcing such a change as long as the users are happy with the way the system works now. Otherwise, the Government may well find itself having to devote considerable time and resources to ensuring that the independent suppliers maintained an uninterrupted flow of imports and being held responsible for any shortages that might occur. However, the effectiveness of the Committee could be improved if it employed the services of a technical person who would be better able to negotiate the quality and characteristics of coal imports with suppliers in the neighbouring countries.



(ii) Indigenous Supply

25. While all of Malawi's coal requirements are currently imported, there are several known deposits in the country whose exploitation and development has periodically been suggested as an alternative. The best known of these deposits -- and, on the basis of the available information, the most promising one -- is situated at the Ngana field near Karonga in the far north of the country. Unfortunately, the development of this deposit is hampered by the poor physical characteristics of the coal -- low calorific value and a high 35% ash content -- and its remote location in relation to the main consuming centers in the South. Technically it would be possible to upgrade the coal (to about 24 MJ/kg and 18% ash content) by washing it prior to its shipment by road, lake and rail to the South but this would result in an ex-Blantyre cost of between \$110-150/ton which is substantially higher than the cost of imported coal of the same or better quality.

26. The main alternative use of this coal is to burn it in its natural state in a mine-mouth thermal power plant which would generate electricity for transmission to the load centers in the central and southern region. The problem with this is that the costs of electricity generated by such a plant are expected to be higher than those of the two hydro projects that would otherwise be required up to 1995. The extent of mineable reserves - 1.7 million tons by surface mining or 2.2 million tons through underground mining - would limit the size of a coal-fired power station to about 20 MW which would entail high unit investment costs, and operating and fuel costs are also likely to be high.

Recommendation 4

27. The main implications of this discussion are that prospects for developing the Ngana coal fields in the foreseeable future are poor. In the 1990's, increases in the price of imported coal, or a growing shortage of cheap hydro sites could make a revaluation of this coal a worthwhile endeavour. In the interim, it is probably best left in the ground.

28. As for the four other known deposits, there is only limited available information but it is not encouraging. They suffer from the same problems of inaccessibility and at least two of the sites are badly faulted and likely to be difficult to mine. As part of its ongoing work, the Geological Survey should attempt to augment the information on these deposits but this is not a high priority task for the Government.



D. RENEWABLES

(i) Fuelwood

29. Fuelwood is Malawi's main source of energy. The country's total fuelwood and pole requirements are estimated at around 10 m<sup>3</sup> million of which 86% is fuelwood and the balance building poles. Wood is not only the main household fuel for 90 percent of the population but also a major industrial fuel for tobacco and tea curing and brickmaking. The tobacco industry alone accounts for 40% of all wood used.<sup>1</sup> This demand for wood is met from a variety of sources by far the largest of which is indigenous forests on customary land from which wood is generally removed free of charge and without restriction by the rural population for domestic and agricultural use. Other sources of fuelwood, such as managed forest reserves on Government and private plantations, supplement the supplies from customary land but aggregate consumption still exceeds the level of sustainable yield by about 30 percent. This difference is met from the continuing diminution of Malawi's natural forest cover which is currently disappearing in terms of gross area at 3.5 percent p.a. The situation is particularly pronounced in some of the more heavily populated districts of the Southern and Central Regions.

30. The Government recognizes the potential seriousness of this problem and, with Bank assistance, it has developed a two pronged strategy to tackle it. One aims at building up the long-term supply by providing nationally fuelwood seedlings for sale to the public and a complementary program of extension services to enable them to grow their own supplies of wood. The second strategy involves an intensive afforestation program in areas of localized wood shortages and high population density. The bulk of this work is being done within the context of the Bank's Wood Energy Project which constitutes the main thrust of the Government's program in this area.

31. While this strategy is basically sound, its success, particularly insofar as the self help woodlots are concerned, clearly depends on the response of the public and their perception of the problem. Experience to date on this aspect of the program has been disappointing. In 1980/81, less than 10% of the seedlings produced under the program could be sold. This lack of demand is attributable to a number of factors such as absence of publicity, unpopularity of the species selected and difficulties in selling to farmers anything other than food crops. A number of corrective measures are being taken and the Forestry Department is confident of selling many more seedlings this year, but to a large extent the success of these efforts will depend on

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<sup>1</sup>/ Improvements in the efficiency of fuelwood use in the tobacco industry also offer the greatest potential for fuelwood conservation. This issue is addressed in paras. 48-50 below.



the degree to which potential buyers perceive the fuelwood problem as being a critical one. If there is no significant improvement in the popularity of the seedling sales program in the coming season, the Government should reevaluate the emphasis that should be placed on this aspect of its forestry strategy. It may also choose to restrict the geographical scope of the program to those districts/areas where there is already an apparent fuelwood shortage.

(ii) Other Renewables

32. The main potential for the application of new renewable energy technologies in Malawi lies in the areas of solar and mini hydro energy. These are dealt with in other sections of this report (See paras. 51-52). Some potential also exists for the use of wind energy for water pumping but only limited data are available on this. The mission will analyze this data and present its recommendations in the main Assessment Report.

33. As far as the research and development effort in new energy sources is concerned, the mission's findings make bleak reading. A number of agencies are engaged in experimental work which can best be described as reinventing the wheel without having investigated which type of wheel there exists a market for. The technical feasibility of a biogas plant is being tested at Bunda College. At the polytechnic some researchers want funding for an engine testing laboratory which would be the beginning of a national program to convert all vehicles in Malawi to ethanol.

34. To a large extent this situation results from the complete absence of a national policy on energy R&D work and on any semblance of priorities for this work. The National Research Council, which is supposed to set these priorities is pretty well ineffective. Consequently, individual researchers are free to work on the technology of their choice, often with the use of public funds. Clearly, there is an urgent need to develop some priorities for R&D work and to use these as guidelines for funding such work by individual researchers. The assessment report will attempt to develop some preliminary guidelines in this area and this will also be one of the priority tasks for the national energy planning unit.

Recommendation 5

35. (i) In the case of fuelwood, the mission recommends that the Government and the Bank closely monitor seedling sales in the coming season to determine whether this program needs to be reoriented to better respond to farmers' needs and perceptions.
- (ii) In the case of other renewable energy sources the assessment report will develop some preliminary priorities for further research and development work in the country.

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<sup>1</sup> See paras. 53-58 for additional discussion of this issue.



E. PRICING

(i) Petroleum

36. The Government has traditionally followed a realistic and sensible policy with regard to the pricing of petroleum products. The retail prices for all petroleum products are in excess of their CIF cost and increases in this cost have generally been passed on fairly promptly to final consumers.<sup>1/</sup> Interproduct price relationships do not appear to be distorted, with gasoil prices being much closer (90%) to gasoline prices than is the case in many other developing countries.

37. While the level and structure of retail prices appears satisfactory, a number of improvements can be made at the intermediate stage. First, the current pricing mechanism acts as a disincentive for the oil companies to build up their stock levels. This is because the price they are allowed to charge is revised only when a new shipment comes in and existing stocks are not revalued. Furthermore, their own margin is fixed as a percentage of this landed cost and there is no explicit allowance for any finance charges that they incur in holding stocks for any length of time. The second anomaly that needs to be rectified is the so-called "kerosene subsidy" which is an administrative legacy from the past and serves no purpose. The Government currently imposes a tax of 17.7 Tambala on each litre of kerosene but it also provides, separately, a subsidy of 5.2T/Ltr. on kerosene sales which is in turn offset by an additional tax of 0.2T per litre on gasoline and diesel. The same result could be achieved much more simply and at lower administrative cost by reducing the tax on kerosene to 12.1 Tambala/litre and raising the tax on the other products by 0.2T/litre.

38. Finally, there has been some concern in the past regarding the high CIF price of petroleum products in Malawi. There is indeed some evidence to suggest that between 1979 and 1981, Malawi was paying too much for its oil because OILCOM continued to get its supply -- which is 60% of the market -- from BP and Shell at an average price which was around 15% higher than the cost of supplies for the other oil companies trading in the country. However, this problem has recently been resolved after negotiations between OILCOM and BP/Shell and its product costs are now in line with the others. Malawi will still have to pay a price for its inland location but contrary to our impressions before the mission, this price does not seem to be excessive. Currently the average landed cost of the reconstituted barrel<sup>2/</sup> at Blantyre is \$57.42 of which \$8.0 is attributable to transport, handling and other miscellaneous charges incurred at the port and for inland transportation.

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1/ Retail prices in September 1981 were as follows: (US\$/gallon) - gasoline - \$3.12; gasoil - \$2.85; kerosene - \$2.15; furnace fuel (mainly gasoil) - \$2.71.

2/ It is important to bear in mind the fact that the consumption pattern in Malawi is heavily biased towards lights products. The reconstituted barrel comprised gasoline 29%, kerosene and jet fuel 18%, diesel 50% and furnace oil 3%.



Recommendation 6

39. In view of the above discussion, the mission recommends the following measures:

- (i) The Government should reexamine with the oil companies the financial disincentives embedded in the current procedure for the treatment of their inland stock. This could be done through the introduction of an explicit clause reimbursing their stock finance charges or through allowing more frequent revaluations of stocks held in the country.
- (ii) The "kerosene subsidy" scheme should be abolished and the regular taxes on kerosene and the other products adjusted to provide the same net effect at a lower administrative cost.
- (iii) The Government should begin to actively monitor the CIF costs reported by the various oil companies to ensure that in future, anomalies -- like the one affecting OILCOM's cost of supply for two years -- are addressed without undue delay. A corollary of this is that the Government should now begin to obtain some independent information on international product price trends so it can evaluate more knowledgeably the submissions made by the oil companies.

(ii) Electricity

40. Electricity tariffs are approved by the Government but they are basically set by ESCOM because the Government does not have the technical expertise to critically evaluate the detailed rationale behind ESCOM's proposals. In 1977, the Bank examined ESCOM's tariffs in some detail and proposed a recommended tariff structure based on incremental costs but this was only partially implemented. The structure of tariffs has remained largely unchanged for several years although annual surcharges have been levied to meet increased operating costs and ESCOM's financial performance has generally been satisfactory. Earlier this year, ESCOM submitted a proposal to restructure its tariffs and this has been approved by the Government to come into effect at the beginning of next year.

41. The proposed new tariffs are a significant improvement on the previous ones particularly in their treatment of industrial consumers. However, a number of anomalies remain. The most important of these is the fact that a declining block charge for units consumed is retained in three of the four tariff categories. The mission could not obtain any convincing rationale from ESCOM's management as to why this two-step system could not have been replaced by a single unit charge at this juncture. The second problem stems from the division of domestic consumers into "high density" and "low density" areas which determines the particular tariff on which they are charged (see Table 2). The problem with this system is that households with the same monthly consumption level have different electricity bills simply because they chose to live in different areas. Finally, there is the question of the effectiveness of the high density tariff in achieving its prime objective of providing a limited amount of electricity at low cost to the



poorer consumers. No detailed statistics are available but a limited market survey done by ESCOM suggests that more than a third of the high density consumers have a monthly consumption level between 0-20 kwh. Because of the fixed minimum charge of K0.75/mo., many of these poorest consumers could actually be paying a higher average price for their electricity than those that are better off.

Table 2

Domestic Consumers Electricity Tariff

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Low density: Minimum charge: K4.00 per month.  
Unit charge: 0-225 Kwh @ 6.3T/Kwh  
more than 225 Kwh @ 4.6T/Kwh  
High density: Minimum charge: K0.75 per month.  
Unit charge: 0-150 Kwh @ 4T/Kwh  
more than 150 Kwh @ 6T/Kwh

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Recommendation 7

42. It is probably too late to address the issues raised above before the proposed tariffs go into effect on January 1, 1982. However, the mission recommends that the Government begin a study of these issues with a view to a further restructuring of tariffs around the end of 1982 when the level would need to be raised in any event for financial reasons. In particular, these revisions should develop up-to-date estimates of the structure and level of marginal costs and, within this framework, examine the merits of: (i) replacing the declining unit charge with a single Kwh rate; (ii) replacing the separate high and low density domestic tariffs with a single tariff which could still provide an initial block of units at a lower rate; and, (iii) examine the effect of the minimum monthly charge on the cost of electricity for the lowest income consumers and suggest any appropriate modifications.

43. The Government agrees with this approach and has asked the mission for Bank assistance in this area, which the mission strongly recommends that the Bank be willing to provide. The Government should also develop some expertise in the field of public utility pricing so that more meaningful technical dialogue can take place on these matters between ESCOM and Government staff.

(iii) Fuelwood

44. Currently, most fuelwood is a non-traded commodity, collected free of charge from customary land by family members. For resale, a license must be obtained and fixed stumpage rates paid for cutting wood. The average stumpage price of fuel from customary land is US\$1.28 per m<sup>3</sup>, from plantations the price ranges from US\$1.70 to US\$4.0 per m<sup>3</sup>. To promote more efficient use of wood resources and to stimulate further forestry development, the Government has agreed to gradually increase wood prices so that by the time the wood produced under the Bank project is marketed in the mid 1980's, these prices would be sufficient to recover in real terms the cost of wood production.



Based on the project targets and a 10 percent discount rate, the average stumpage prices of fuelwood and poles in constant terms would have to be US\$8.7 per m<sup>3</sup> on District and Town Council plantations by the time the project output is marketed.

45. This is a laudable objective, but there are serious doubts about whether it can be realized. Quite apart from the social and political considerations which affect the Government's wood pricing policy, the main objection is that any attempts to substantially increase the official selling price of wood would simply result in the increased use of wood from indigenous forests over which little control can be exercised. In other words, in a situation where 90 percent of rural households and a substantial proportion of urban families collect their own wood free of charge, the Government has only limited freedom to set wood prices independently. Doubtless, some increases in the price of wood will be possible as the market responds to growing supply deficits but it would be unrealistic to assume that these will be dictated by Government policy.

#### Recommendation 8

46. The mission recommends that the Government and Bank review the viability of raising fuelwood prices to cover economic cost by the mid-1980's as is required under the Bank assisted Wood Energy Project. If appropriate, the relevant covenant under this project should also be modified.

#### F. EFFICIENCY OF ENERGY USE

47. The mission visited the main energy consuming plants in the country and found that they were, with one or two exceptions, reasonably efficient in their energy use. One of the main reasons for this is that many of these companies are connected with large international corporations and have been able to make use of their technical expertise. However, the mission did not have the opportunity to examine the efficiency of energy use in the numerous small and medium scale industrial and commercial enterprises who do not have the same kind of technical links with international corporations and are probably less aware of recent developments in the field of energy conservation techniques and equipment. The potential for energy savings in this sector needs to be evaluated further.

48. The two main areas which appear to hold substantial potential for improved energy efficiency are the tobacco industry and the transport sector. The tobacco industry is both a major wood user (about 40% of total wood consumption) and by all accounts a relatively inefficient one. The amount of wood used to process a unit of tobacco is reported to vary enormously from estate to estate -- the Tobacco Research Authority, (TRA) quotes a figure of 7:1. Consequently, the potential savings that would accrue from bringing up the less efficient operators to the level of the better run estates are large. Quite apart from this, the TRA is doing some interesting work on modifying flue and barn design which could lead to savings of up to 50% in wood consumption by even the better run estates and at relatively low cost. The potential impact of these applications on the country's fuelwood problem is so great that it is almost incomprehensible why more attention is not being devoted to it. The TRA is an advisory, grower-supported body with no enforcement powers and no effective mechanism for getting the results of



its work through to the smallholder sector which is where the greater savings potential lies. The Government provides little support to the TRA and its own energy unit in the Ministry of Agriculture has so far restricted its focus almost entirely to the use of wood by households.<sup>1/</sup>

49. In the transport sector, the main potential for energy (liquid fuel) savings lies in the modification of the vehicle fleet. There appears to be a far higher proportion of larger engined private vehicles in Malawi than is the case in many other developing countries. This in turn is due to the fact that for all practical purposes there is a uniform and relatively low rate of import duty on cars, regardless of value or engine size. Furthermore, many vehicles are reportedly imported into the country as "capital equipment" without payment of any import duty. This duty structure needs to be revised to provide a better incentive for importing more fuel-efficient cars. The Government also needs to review its own vehicle procurement and operation policies so as to limit the use of heavy fuel using, four-wheel-drive vehicles to those areas where they are needed. There appears to be currently an excessive use of these vehicles for intra-urban operation.

#### Recommendation 9

50. (i) The highest priority for Government action in this area is to strengthen and expand the work being done on improving the efficiency of fuelwood use in the tobacco industry. This efforts could result in substantial fuelwood savings but considerable effort will be required to ensure that tobacco growers (particularly smallholders) are made aware of this potential and that the focus is on the more easily applicable techniques in the early years.

(ii) In the transport sector, the Government should revise the existing duty structure on motor vehicles and also review its own vehicle procurement and operation policies.

(iii) In the industrial sector, a study should be carried out on the potential for energy conservation in small and medium scale enterprises and, if warranted, an institutional framework established to provide the technical expertise that will be required to realize this potential.

#### G. INTERFUEL SUBSTITUTION

51. Whereas improved efficiency in energy use could yield substantial benefits in the medium term, the potential savings that would accrue from interfuel substitution policies in Malawi are more limited. Wood is unlikely to be replaced as the main household fuel in the medium term; the public electric power system is already almost exclusively hydro-based; most of the large industries already use coal as a boiler fuel instead of furnace oil; and, the main use of liquid fuels is in the transport sector. Nevertheless, some opportunities do exist and should be pursued. The more important of these are:

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<sup>1/</sup> See paras. 56-58 below.



- (i) The replacement of gasoline by ethanol. This program is already underway (with IFC assistance) and a 10:90 ethanol- gasoline blend should be available on a nationwide basis by spring next year. The Government now wants to investigate the possibility for further increasing the supply of ethanol by diversifying its source crop from sugarcane to cassava. The mission was asked whether the Bank would be willing to assist the Government in investigating the economic feasibility of such a program. We indicated that in our view the Bank would be happy to assist by reviewing the terms of reference and preliminary drafts of any studies that the Government commissioned on this area.
- (ii) The use of solar water heaters to replace electricity. A few private firms are producing and selling solar water heaters with mixed success but considerable technical assistance would be required to get this program off the ground. Replacing the bulk of the country's electric water heaters with solar units would reduce the peak demand for electricity by about 10 MW -- which is equivalent to just over a year's growth in capacity. However, it would not imply any fuel savings as the electrical system is hydro-based. Under these circumstances, the merits of devoting national resources to such a program are less obvious and need to be worked out in greater detail. In particular, the reduction in peak demand would be more limited if the electrical back-up units for the solar water heaters were switched on at the time when the system was already operating at its maximum demand. The assessment report will include an analysis of these questions.
- (iii) The use of solar crop dryers. While there is some open air drying of both tobacco and tea, no use is made of modern enclosed solar crop dryers in the country. This technology is a potential substitute for part of the fuelwood and other fossil fuels used in agro processing but the size of its impact needs to be assessed in greater detail.
- (iv) The use of mini-hydro schemes to replace isolated diesel generation. Some agro-industries (primarily tea estates) already generate electricity from mini-hydro stations but the bulk of Malawi's captive industrial generating capacity and a small amount of its public electricity supply continues to rely on diesel-based power. To the extent that suitable mini-hydro sites are available in the proximity of these stations, their development could result in significant diesel fuel savings. However, despite the promising potential of this source, there is only scanty information available on it. A recent UN mission examined five minihydro sites and recommended further work on three of them. The report of that mission is expected soon. At the same time, the systematic collection and evaluation of data relating to the potential application of mini hydro installations also needs to begin on a national basis.



#### Recommendation 10

52. The mission's main recommendations in this area are:

- (i) The Government should study the possibilities for increasing the supply of ethanol through the use of cassava. The Bank should be willing to assist the Government in assessing the scope and nature of such a study and in reviewing any preliminary drafts that are produced. IPD has indicated that it would be happy to follow up on this question and the mission will be working closely with IPD staff in their analysis.
- (ii) The Government should begin to carry out (with ESCOM ) a comprehensive survey and preliminary ranking of potential mini-hydro sites, starting in those areas where there are existing diesel generating sets which could be replaced. Some technical assistance may be required for this work and the Bank should be willing to finance it if so requested.

#### H. INSTITUTIONS

53. One of the main problems in Malawi's energy sector is its currently weak and fragmented institutional structure, particularly for policy formulation and management at the national level. A number of Government departments are active in the sector but their roles and relationship are not clearly defined. At the subsectoral level, the various parastatal and private agencies are generally well run but their work is poorly coordinated and carried out in the absence of overall sectoral priorities.

54. Four Government units are directly concerned with aspects of energy planning. The Department of Energy and Contingency Planning in the Office of the President and Cabinet (OPC) is formally charged with energy policy formulation and sector planning but its main concern has been and is the allocation of scarce commodities (not restricted to fuels) in times of shortage. It has so far given no thought to energy planning in a wider sense and its present staffing (2 administrative officers) does not equip it to do so. This problem could be rectified through additional staff but it would also require a complete change in the Department's direction. Its present director appears to have little interest in extending the focus of the Department's work and his prior experience does not include any exposure to energy policy issues. Senior policy makers in the Government recognize this problem and are considering the revision of the Department's terms of reference to enable it to focus exclusively on the administration of allocation schemes for essential commodities which are subject to supply interruptions.

55. In contrast to the Energy Department, the Economic Planning Division (EPD), which is the Government's national planning and monitoring agency, has over the past year begun to take an active interest in energy matters and developed some expertise in this area. In preparation for the mission EPD had set up a four-man energy inventory team which collected historical data and background information and carried out some preliminary analysis. This team needs to be strengthened but it could well develop as the nucleus of an energy

planning capability. However, this would entail a broadening of EPD's traditional role which has been the review of individual sectoral plans formulated by the various line ministries concerned.

56. In addition to the above, wood and renewable energy planning is the focus of two other units which were both set up in the then Ministry of Agriculture and Natural Resources as part of the IDA wood energy project. This Ministry has recently been split into two and there now exists a somewhat curious arrangement whereby the Ministry of Agriculture has an Energy Unit responsible for carrying out surveys and studies aimed at improving the efficiency of fuelwood use and investigating alternative sources of energy to replace wood. At the same time, there is a Wood Energy Division in the Ministry of Forestry and Natural Resources which is responsible for the physical implementation of the wood energy project and for the supposedly "technical, supply related" aspects of the fuelwood and afforestation program. So far the working level coordination between these units has been good but there is some evidence of friction and overlapping work programs which may well grow as the two Ministries strengthen their separate individual identities. The mission was told that the longer term plan is to move the Energy Unit to the Ministry of Forestry and Natural Resources. We believe this to be a sensible idea and recommend its early implementation.

57. The more important issue, however, is not one of overlapping work but of omission. The Energy Unit has so far concentrated its investigations entirely on the use of wood as a household fuel and neither it nor the Wood Energy Division has examined the possibilities of increasing the efficiency of wood use in the tobacco industry despite the fact that nearly half the fuelwood is used for this purpose and that the potential for fuel saving in this sector appears to be substantial. This limited focus needs to be urgently broadened.

#### Recommendation 11

58. It is much easier to identify problems in an existing institutional structure than it is to recommend an ideal alternative which will work in Malawi's particular circumstances. Nevertheless, the following points can be made.



- (i) The Government should make an early decision on whether the Energy Department will continue to be responsible for energy planning. If it is, then its staffing, direction and focus need to be radically altered. If, on the other hand, its responsibilities are not to include sector planning, then an alternative unit has to be found.
- (ii) The most likely candidate for this alternative unit is the EPD, although this too will need strengthening and technical assistance and some reinterpretation of its traditional role.
- (iii) The focus of the work of the Energy Unit and the Wood Energy Division should be broadened to include the industrial uses of wood. The proposal to relocate the Energy Unit into the Ministry of Forestry and Natural Resources should also be implemented at an early date.

#### IV. TIMETABLE FOR FURTHER PROCESSING

59. According to the Pre-mission Issues Paper, the Yellow Cover draft of the Energy Assessment Report would be circulated by February 28, 1982. There appear to be no problems in meeting this deadline.

November 2, 1981

MAhmed:ams.-

MALAWI

LIST OF PERSONS MET

Ministry of Finance

Mr. S. Kakhobwe, Principal Secretary  
Mr. G. Kalinga, Senior Deputy Principal Secretary  
Mr. Z. Soko, Principal Economist  
Mr. G. B. Chiwaula, Accountant General

Office of President and Cabinet

Mr. H. M. Mbale, Principal Secretary, Administration  
Mr. Kukada, Deputy Principal Secretary

Economic Planning Division (OPC)

Mr. A. Bobe, Chief Economist (Acting)  
Mr. E. Mponela, Senior Economist  
Mr. C. Sungani, Economist  
Mr. G. Kayira, Economist  
Mr. C. Tembo, Economist  
Mr. R. Laslett, Economist

Department of Energy (OPC)

Mr. W. K. Sulamayo, Controller  
Mr. Nthara, Economist

Ministry of Trade & Industry

Mr. J. Mulange, Principal Secretary  
Mr. J. Munthali, Senior Deputy Principal Secretary  
Mr. V. N'Disale, Economist  
Mr. P. Grant, Economist  
Mr. D. Edwards, Industrial Economist  
Mr. W. Buchanan, UNIDO Advisor, Bricks and Ceramics



Ministry of Works and Supplies

Mr. R. Kitchen, Senior Deputy Principal Secretary  
Mr. Clark, Chief Controller  
Mr. R. Buckland, Electrical Engineer  
Mr. Shepperd, Chief Civil Engineer

Department of Statutory Bodies (OPC)

Mr. L. Msiska, Principal Secretary  
Mr. P. Kalilongwe, Senior Deputy Principal Secretary  
Mr. Thawle, Secretary, National Research Council

Geological Survey (Ministry of Forestry and Natural Resources)

Dr. R. L. Johnson, Chief Geologist  
Mr. J. Chatupa, Assistant Chief Geologist  
Dr. M. J. Crowe, Assistant Chief Geologist  
Mr. Malindi, Project Officer

Ministry of Agriculture

Dr. D. French, Senior Energy Advisor  
Mr. A. Standen, Assistant Director, Development Department  
Mr. H. Proverbs

Ministry of Forestry and Natural Resources

Dr. W. K. Lipato, Principal Secretary  
Mr. D. May, Chief Conservator of Forests  
Mr. W. Chamayere, Assistant Division Forestry Officer, Wood Energy Division  
Mr. Ndovi, Divisional Forestry Officer, Wood Energy Division  
Dr. C. Kidd, UN Advisor, Dept. of Lands, Valuation and Water.

UNDP

Mr. R. Borthwick, Resident Representative

Representatives of External Donor Agencies

Dr. Feng Yueh-Tseng, Ambassador of the Republic of China  
Mr. Rolf Lehmen, Economic Adviser to the Delegation of the Commission  
of the European Communities to Malawi  
Mr. Wolfgang Kistenich, Deputy Head of Mission, Embassy of the Federal  
Republic of Germany  
Mr. Jerome Chastenet de Castaing, Commercial Attache, French Embassy  
Mr. P. J. Sullivan, Acting High Commissioner, British High Commission  
Ms. Vivian Anderson, USAID Mission Director  
Mr. David Garms, Program Officer, USAID Mission  
Mr. David Viveash, First Secretary Development, Canadian High  
Commission, Lusaka  
Mr. P. S. Sahai, Indian High Commissioner

University of Malawi

Dr. Kimble, Vice Chancellor  
Dr. Harrison, Polytechnic  
Dr. Mjojo, Chemistry Department  
Dr. Williams, Social Science Department  
Mr. D. B. Roy, Estates Development Officer

Tobacco Research Authority

Mr. R. Berkeley-Smith, Advisor

ESCOM

Mr. A. Mzengereza, Executive Chairman  
Mr. J. Asherson, General Manager  
Mr. D. Dixon, Financial Controller  
Mr. I. Douglas, Consultant; Kennedy and Donkin  
Mr. Archibald, Consultant; Watermeyer, Legge, Piesold and Uhlman  
Mr. Rosaro, Project Engineer

Malawi Railway

Mr. Husmeyer, General Manager  
Mr. W. Gordon, Assistant General Manager  
Mr. G. Woodcock, Transport Manager



Oil Com (Oil Company of Malawi)

Mr. P. Roeeler, Chief Executive  
Mr. D. Lesley, Financial Controller

Mobil

Mr. Windsor, Chief Executive

Caltex

Mr. D. Pickering, General Manager

Press Holdings Ltd.

Mr. T. S. Mngwazu, Chief Executive  
Mr. D. S. Kambauwa, Company Secretary  
Mr. T. Ratnam, Acting Financial Controller  
Mr. S. M. Kamanga, Head, Projects Department  
Mr. P. W. Mamba, Projects Economist

UNDP/UNCTAD Transport Project

Mr. A. M. Monyake, Project Director

Capital City Development Corporation

Mr. E. G. Shaba, General Manager

Posts and Telecommunications Department

Mr. K. K. Gunawardana, Senior Engineer, Planning  
Mr. J. Lanham, Chief Engineer, Operations and Maintenance  
Mr. A. D. Williamson, Chief Engineer, Development and Planning

National Statistical Office

Mr. E. F. Chinganda, Commissioner for Census and Statistics

Tea Research Station

Dr. R. Ellis, Director

Lilongwe Sheet Metal

Mr. F. Mac Carogher, Manager

Portland Cement Company

Mr. Kachinjika, Chief Chemist  
Mr. Mtegha, Mining Engineer

Lever Brothers Malawi, Ltd.

Mr. Mungwira, Technical Director  
Mr. N. Jones, Chief Engineer  
Mr. P. Kelwn, Process Engineer

Chibuku Products, Ltd.

Mr. D. A. Botha, Manager

Carlsberg Malawi Brewery, Limited

Mr. B. Soeberg, General Manager

Sugar Company of Malawi (Sucoma)

Mr. W. J. Kazima, Estate Secretary  
Mr. H. C. Cugnet, Mill Manager  
Mr. E. Mazembo, Mill Electrical Engineer

David Whitehead and Sons (Malawi) Limited

Mr. N. Rutherford, General Manager

National Oil Industries, Ltd. (NOIL)

Dr. K. W. Lee, General Manager

Alda (Malawi) Limited

Mr. D. Kriel, Managing Director

Eco-Systems, Ltd.

Mr. J. Sonke, Manager



Coal Users' Committee

Mr. W. Gemmell, Secretary  
Mr. R. W. Cormack, Chairman

Maltraco Ltd.

Mr. S. White, Sales Manager  
Mr. L. Mtimbusya, Branch Manager  
Mr. R. Clough, Service Manager

Atlas Copco (Malawi) Ltd.

Mr. I. Mooya, Branch Manager

Management Services, Malawi

Mr. R. Nesbitt, Marketing Manager

Other Coal Consumers

Mr. F. Saunders, Accountant, Optichem  
The Secretary, Zomba General Hospital  
The Secretary, Queen Elizabeth General Hospital

## OFFICE MEMORANDUM

DATE: October 30, 1981

TO: Messrs. L. de Azcarate, (WANVP) and R. Bouhaouala, (WAP)  
 FROM: Julian Bharier, Acting Chief, EGYEA *JB*  
 SUBJECT: FY83 Energy Sector Assessment Program

1. We are now starting the process of developing the Bank-wide program of energy assessments for FY83 so that they can be integrated with the CESW indicative statements to be prepared in November. You will recall that the country selection is made on the basis of the following criteria:

- (a) Global importance (or potential importance) of the country in terms of energy Supply or demand;
- (b) Seriousness of the problem facing the country;
- (c) Prospects of achieving results in the country, and,
- (d) Inability of the country to organize its own assessment.

2. We have drawn up a list of candidate countries for FY83 and estimate that it will be possible to launch missions to 12 of these during the year. We are preparing Energy Worksheets for the candidate countries (as we did last year) to provide the analytical basis for final selection. Responsibility for mission leadership and the detailed costing of the assessments will come later, and, as usual, will be finalized during discussion of the relevant pre-mission issues paper.

3. In general, we believe it essential that the country economist participate in the assessment missions as well as staff or consultants from the relevant Regional project divisions (power, agriculture, transport, etc., as appropriate).

4. For the Western Africa Region, energy assessment missions have already been scheduled for the following countries:

Ghana  
 Senegal  
 Ivory Coast

In the first of these countries, the assessment report has already been completed in Green Cover and discussed with the Government. In the remaining countries, work will spill over into FY83.

5. The candidate countries for FY83 are:

Nigeria	Benin	Upper Volta
Niger	Togo	
Mali	Guinea	



We would like to meet with you to discuss the relative priorities for these countries and to discuss the merits of including these in the program for the coming year. In addition to the assessment program for FY83, we would also like to discuss with you the follow-up work stemming from the recommendations made by the completed assessment reports, as well as additional energy sector work in other countries dealing with specific operational issues and inputs to SALs.

6. As in the past year, UNDP funds may be used to pay for the travel and related expenses of all Bank staff who participate in energy assessment missions to those countries which have requested such a mission under the Joint UNDP/Bank program.

cc: Messrs. Rovani, Sheehan, Bourcier, Rao, Sadove, Ahmed (EGY)

JBharier/MAhmed:ams,-

# OFFICE MEMORANDUM

DATE: October 30, 1981

TO: Messrs. P. Hasan (AEN) and H. Wyss (AEP)  
FROM: Julian Bharier, Acting Chief, EGYEA *JB*  
SUBJECT: FY83 Energy Sector Assessment Program

1. We are now starting the process of developing the Bank-wide program of energy assessments for FY83 so that they can be integrated with the CESW indicative statements to be prepared in November. You will recall that the country selection is made on the basis of the following criteria:

- (a) Global importance (or potential importance) of the country in terms of energy Supply or demand;
- (b) Seriousness of the problem facing the country;
- (c) Prospects of achieving results in the country, and,
- (d) Inability of the country to organize its own assessment.

2. We have drawn up a list of candidate countries for FY83 and estimate that it will be possible to launch missions to 12 of these during the year. We are preparing Energy Worksheets for the candidate countries (as we did last year) to provide the analytical basis for final selection. Responsibility for mission leadership and the detailed costing of the assessments will come later, and, as usual, will be finalized during discussion of the relevant pre-mission issues paper.

3. In general, we believe it essential that the country economist participate in the assessment missions as well as staff or consultants from the relevant Regional project divisions (power, agriculture, transport, etc., as appropriate).

4. For the EAP Region, energy assessment missions have already been scheduled for the following countries:

Philippines  
Indonesia  
Thailand  
Papua New Guinea

In all of these countries, assessment reports will be completed in Green Cover by the end of FY82.

5. The candidate countries for FY83 are:

Malaysia  
Fiji  
Salomon Islands



We would like to meet with you to discuss the relative priorities for these countries and to discuss the merits of including these in the program for the coming year. In addition to the assessment program for FY83, we would also like to discuss with you the follow-up work stemming from the recommendations made by the completed assessment reports, as well as additional energy sector work in other countries dealing with specific operational issues and inputs to SALs.

6. As in the past year, UNDP funds may be used to pay for the travel and related expenses of all Bank staff who participate in energy assessment missions to those countries which have requested such a mission under the Joint UNDP/Bank program.

cc: Messrs. Rovani, Sheehan, Bourcier, Rao, Sadove, Ahmed (EGY)

JBharier/MAhmed:ams.-

## OFFICE MEMORANDUM

DATE: October 30, 1981

TO: Messrs. R. Gulhati, (EAN) and J. Bronfman, (EAP)  
FROM: Julian Bharier, Acting Chief, EGYEA *JB*  
SUBJECT: FY83 Energy Sector Assessment Program

1. We are now starting the process of developing the Bank-wide program of energy assessments for FY83 so that they can be integrated with the CESW indicative statements to be prepared in November. You will recall that the country selection is made on the basis of the following criteria:

- (a) Global importance (or potential importance) of the country in terms of energy supply or demand;
- (b) Seriousness of the problem facing the country;
- (c) Prospects of achieving results in the country, and,
- (d) Inability of the country to organize its own assessment.

2. We have drawn up a list of candidate countries for FY83 and estimate that it will be possible to launch missions to 12 of these during the year. We are preparing Energy Worksheets for the candidate countries (as we did last year) to provide the analytical basis for final selection. Responsibility for mission leadership and the detailed costing of the assessments will come later, and, as usual, will be finalized during discussion of the relevant pre-mission issues paper.

3. In general, we believe it essential that the country economist participate in the assessment missions as well as staff or consultants from the relevant Regional project divisions (power, agriculture, etc., as appropriate).

4. For the Eastern Africa Region, energy assessment missions have already been scheduled for the following countries:

Burundi	Zimbabwe
Rwanda	Sudan
Mauritius	Zambia
Malawi	
Kenya	

In the first six of these countries, assessment reports will be completed in Green Cover by the end of FY82; in the remaining countries, work will spill over into FY83.

5. The candidate countries for FY83 are:

Tanzania  
Ethiopia  
Somalia



We would like to meet with you to discuss the relative priorities for these countries and to discuss the merits of including these in the program for the coming year. In addition to the assessment program for FY83, we would also like to discuss with you the follow-up work stemming from the recommendations made by the completed assessment reports, as well as additional energy sector work in other countries dealing with specific operational issues and inputs to SALs.

6                   6. As in the past year, UNDP funds may be used to pay for the travel and related expenses of all Bank staff who participate in energy assessment missions to those countries which have requested such a mission under the Joint UNDP/Bank program.

cc: Messrs. Rovani, Sheehan, Bourcier, Rao, Sadove, Ahmed (EGY)

JBharier/MAhmed:ams.-

## OFFICE MEMORANDUM

DATE: October 30, 1981

TO: Messrs. G Pfeiffermann, (LCNVP) and J. Jennings, (LCP)  
 FROM: Julian Bharier, Acting Chief, EGYEA  
 SUBJECT: FY83 Energy Sector Assessment Program

1. We are now starting the process of developing the Bank-wide program of energy assessments for FY83 so that they can be integrated with the CESW indicative statements to be prepared in November. You will recall that the country selection is made on the basis of the following criteria:

- (a) Global importance (or potential importance) of the country in terms of energy Supply or demand;
- (b) Seriousness of the problem facing the country;
- (c) Prospects of achieving results in the country, and,
- (d) Inability of the country to organize its own assessment.

2. We have drawn up a list of candidate countries for FY83 and estimate that it will be possible to launch missions to 12 of these during the year. We are preparing Energy Worksheets for the candidate countries (as we did last year) to provide the analytical basis for final selection. Responsibility for mission leadership and the detailed costing of the assessments will come later, and, as usual, will be finalized during discussion of the relevant pre-mission issues paper.

3. In general, we believe it essential that the country economist participate in the assessment missions as well as staff or consultants from the relevant Regional project divisions (power, agriculture, transport, etc., as appropriate).

4. For the LAC Region, energy assessment missions have already been scheduled for the following countries:

Panama	Colombia
Caribbean	Costa Rica
Brazil	Peru
Haiti	Bolivia

In the first four of these countries, assessment reports will be completed in Green Cover by the end of FY82; in the remaining countries, work will spill over into FY83.

5. The candidate countries for FY83 are:

Mexico	Ecuador
Argentina	Guatemala
Chile	



We would like to meet with you to discuss the relative priorities for these countries and to discuss the merits of including these in the program for the coming year. In addition to the assessment program for FY83, we would also like to discuss with you the follow-up work stemming from the recommendations made by the completed assessment reports, as well as additional energy sector work in other countries dealing with specific operational issues and inputs to SALs.

6. As in the past year, UNDP funds may be used to pay for the travel and related expenses of all Bank staff who participate in energy assessment missions to those countries which have requested such a mission under the Joint UNDP/Bank program.

cc: Messrs. Rovani, Sheehan, Bourcier, Rao, Sadove, Ahmed (EGY)

JBharier/MAhmed:ams,-

## OFFICE MEMORANDUM

TO: Messrs. J. Holsen, (ASNVP) and P. Geli, (ASP)

DATE: October 30, 1981

FROM: Julian Bharier, Acting Chief, (EGYEA) *JB*SUBJECT: FY83 Energy Sector Assessment Program

1. We are now starting the process of developing the Bank-wide program of energy assessments for FY83 so that they can be integrated with the CESW indicative statements to be prepared in November. You will recall that the country selection is made on the basis of the following criteria:

- (a) Global importance (or potential importance) of the country in terms of energy supply or demand;
- (b) seriousness of the problem facing the country;
- (c) prospects of achieving results in the country, and
- (d) inability of the country to organize its own assessment.

2. We have drawn up a list of candidate countries for FY83 and estimate that it will be possible to launch missions to 12 of these during the year. We are preparing Energy Worksheets for the candidate countries (as we did last year) to provide the analytical basis for final selection. Responsibility for mission leadership and the detailed costing of the assessments will come later, and as usual, will be finalized during discussion of the relevant pre-mission issues paper.

3. In general, we believe it essential that the country economist participate in the assessment missions as well as staff or consultants from the relevant Regional project divisions (power, agriculture, transport, etc., as appropriate).

4. For the South Asia Region, energy assessment missions have already been scheduled for the following countries:

Pakistan  
Sri Lanka  
Bangladesh  
Nepal

In the first three of these countries, assessment reports will be completed in Green Cover by the end of FY82; in the case of Nepal, work will spill over into FY83.



5. The candidate country for FY83 is Burma; however, we are uncertain of the priority which should be accorded to this country on a Bank-wide basis and would like to meet with you to discuss the merits of including it in the program for the coming year. In addition to the assessment program for FY83, we would also like to discuss with you the follow-up work stemming from the recommendations made by the completed assessment reports, as well as additional energy sector work in other countries dealing with specific operational issues and inputs to SALs.

6. As in the past year, UNDP funds may be used to pay for the travel and related expenses of all Bank staff who participate in energy assessment missions to those countries which have requested such a mission under the Joint UNDP/Bank program.

cc: Messrs. Rovani, Sheehan, Bourcier, Rao, Sadove, Ahmed (EGY)

JBharier/MAhmed:ams.-

## OFFICE MEMORANDUM

TO: Messrs. V. Dubey, (EMNVP) and R. Carmignani, (EMP)

DATE: October 30, 1981

FROM: Julian Bharier, Acting Chief, (EGYEA) SUBJECT: FY83 Energy Sector Assessment Program

1. We are now starting the process of developing the Bank-wide program of energy assessments for FY83 so that they can be integrated with the CESW indicative statements to be prepared in November. You will recall that the country selection is made on the basis of the following criteria:

- (a) Global importance (or potential importance) of the country in terms of energy supply or demand;
- (b) seriousness of the problem facing the country;
- (c) prospects of achieving results in the country, and
- (d) Inability of the country to organize its own assessment.

2. We have drawn up a list of candidate countries for FY83 and estimate that it will be possible to launch missions to 12 of these during the year. We are preparing Energy Worksheets for the candidate countries (as we did last year) to provide the analytical basis for final selection. Responsibility for mission leadership and the detailed costing of the assessments will come later, and, as usual, will be finalized during discussion of the relevant pre-mission issues paper.

3. In general, we believe it essential that the country economist participate in the assessment missions as well as staff or consultants from the relevant Regional project divisions (power, agriculture, transport, etc., as appropriate).

4. For the EMENA Region, energy assessment missions have already been scheduled for the following countries:

Turkey  
Morocco  
Romania

In the first of these countries, the assessment report will be completed in Green Cover by the end of FY82; in the remaining countries, work will spill over into FY83.

5. The candidate countries for FY83 are:

Tunisia  
Yemen Arab Republic  
Egypt  
Portugal



We would like to meet with you to discuss the relative priorities for these countries and to discuss the merits of including these in the program for the coming year. In addition to the assessment program for FY83, we would also like to discuss with you the follow-up work stemming from the recommendations made by the completed assessment reports, as well as additional energy sector work in other countries dealing with specific operational issues and inputs to SALs.

6. As in the past year, UNDP funds may be used to pay for the travel and related expenses of all Bank staff who participate in energy assessment missions to those countries which have requested such a mission under the Joint UNDP/Bank program.

cc: Messrs. Rovani, Sheehan, Bourcier, Rao, Sadove, Ahmed (EGY)

JBharier/MAhmed:ams.-

## OFFICE MEMORANDUM

TO: See Distribution

DATE: October 29, 1981

FROM: Masood Ahmed, Acting Chief, EGYEA

SUBJECT: MALAWI: Energy Assessment Mission -  
Post Mission Issues Paper

The meeting to review the above paper has been postponed to  
10:30 a.m., Monday Nov. 2 in Room D-556.

Distribution:

Messrs. Rovani, Sheehan, Bourcier, Rao, Fish, Dosik, Elejalde,  
Bharier (EGY)  
Ms. Julius (EGY)

MAhmed:bm





# Record Removal Notice

<b>File Title</b> Masood Ahmed - Chronological File - 1981		<b>Barcode No.</b>  30450190
<b>Document Date</b> 27 October, 1981	<b>Document Type</b> Memorandum	
<b>Correspondents / Participants</b> To: J. Keiser, PMD From: Masood Ahmed, Acting Chief, EGYEA		
<b>Subject / Title</b> Interview Evaluation of Mr. J. Bhandari		
<b>Exception(s)</b> Personal Information		
<b>Additional Comments</b>		The item(s) identified above has/have been removed in accordance with The World Bank Policy on Access to Information or other disclosure policies of the World Bank Group.
		<table border="1"><tr><td><b>Withdrawn by</b> Sherrine M. Thompson</td><td><b>Date</b> November 03, 2022</td></tr></table>
<b>Withdrawn by</b> Sherrine M. Thompson	<b>Date</b> November 03, 2022	

Telex  
851-919462

Oct. 27/81  
74544

MS. JANET CORDERY, INTBAFRAD  
LONDON, ENGLAND

FOR PROFESSOR WALTER ELKAM, BRUNEL UNIVERSITY, TEL. 624-5102  
(HOME) OR 37188 (WORK).

AAA THE WORLD BANK'S ENERGY ASSESSMENTS DIVISION WOULD LIKE  
TO CONFIRM YOUR AVAILABILITY TO JOIN THEIR MISSION TO ZAMBIA  
FROM APPROXIMATELY NOVEMBER 18 THRU 25. TERMS OF REFERENCE  
AND BACKGROUND MATERIAL WILL BE SENT TO YOU SOON.

BBB YOU ARE ENTITLED TO ECONOMY CLASS TRAVEL AND ONE REST  
STOP EACH WAY. TRAVEL AUTHORIZATION AND ADVANCE BEING SENT  
THRU AMEXCO, LONDON. WE ARE MAKING RESERVATIONS AT HOTEL  
INTERCONTINENTAL IN LUSAKA. COULD YOU PLEASE CONFIRM YOUR  
ARRIVAL DATE.

CCC MS. RINGLE OF PERSONNEL DEPARTMENT WILL BE IN TOUCH  
REGARDING ADMINISTRATIVE MATTERS. REGARDS, MASOOD AHMED,  
ACTING CHIEF, ENERGY ASSESSMENTS DIVISION, INTBAFRAD

ZAMBIA: Energy Assessment Mission

ROven:ams.-

cc: Ms. Ringle, PMD  
Ms. Owen, EGYEA

Masood Ahmed

Acting Chief, EGYEA



# WORLD BANK OUTGOING MESSAGE FORM (Telegram, Cable, Telex)

IMPORTANT (PLEASE READ INSTRUCTIONS BELOW BEFORE TYPING FORM.)

Class of Service: Telex Date: Oct. 22/81  
Telex No.: 794-22211 Originators Ext: 74545

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START

1 HERE

TO

DEPARTMENT OF MINERALS AND ENERGY

CITY/COUNTRY

PAPUA NEW GUINEA

MESSAGE NO

FOR DR. KEN NEWCOMBE

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AAA FURTHER TO YRTLX OF 10 OCTOBER PLEASED TO CONFIRM FIVE MEMBER  
ENERGY ASSESSMENT MISSION ARRIVING PORT MORESBY NOVEMBER 8 FOR TWO  
AND A HALF WEEKS. RESERVATIONS AT TRAVELODGE HAVE BEEN REQUESTED.  
BBB MISSION LEADER N.B. PRASAD WILL REVIEW OIL AND GAS SUBSECTOR  
AND STRUCTURE AND ORGANIZATION OF CONCERNED INSTITUTIONS AND  
TRAINING NEEDS. HE WILL LIAISE WITH BANK'S PETROLEUM TECHNICAL  
ASSISTANCE MISSION SCHEDULED TO BE IN PNG SIMULTANEOUSLY.  
CCC JOHN TATOM WILL BE RESPONSIBLE FOR EVALUATING GOVERNMENT'S  
PROPOSED POLICY ON NEW SOURCES OF ENERGY AS OUTLINED IN WHITE PAPER.  
AS OF NOVEMBER 13, HE WILL BE JOINED BY ANTHONY ODY OF THE BANK'S  
INDUSTRIAL PROJECTS DEPARTMENT, WHO WILL BE EXAMINING GOVERNMENT'S  
ALCOHOL PROJECTS IN DETAIL.  
DDD DONALD KING WILL REVIEW AND EVALUATE ELCOM'S REVISED 10 - YEAR  
PLAN AND ADVISE ON INSTITUTIONAL AND OTHER ISSUES IN THE SUBSECTOR.  
EEE DAVID NEWBERRY, ECONOMIST, WILL EXAMINE THE LINKS BETWEEN  
ENERGY AND THE MACRO FRAMEWORK. THE PROJECTED IMPACT OF VARIOUS  
SUPPLY/DEMAND SCENARIOS ON THE BALANCE OF PAYMENTS, THE PUBLIC

END  
OF  
TEXT

/c

## NOT TO BE TRANSMITTED

SUBJECT:

DRAFTED BY:

CLEARANCES AND COPY DISTRIBUTION:

AUTHORIZED BY (Name and Signature):

DEPARTMENT:

SECTION BELOW FOR USE OF CABLE SECTION  
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Telex No.: \_\_\_\_\_ Originators Ext: \_\_\_\_\_

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START  
1 HERE TO

CITY/COUNTRY

MESSAGE NO

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END  
OF  
TEXT

INVESTMENT PROGRAM AND GOVERNMENT'S FISCAL SITUATION, AND THE  
PRICING OF VARIOUS ENERGY SOURCES. HE WILL OVERLAP WITH PHILIP  
BERLIN WHO WILL PARTICIPATE IN THE ECONOMIC MISSION.  
FFF HUDA KRASKE WILL ASSIST ON THE ECONOMIC SIDE AND WILL  
COORDINATE THE WORK OF THE VARIOUS MISSION MEMBERS.  
GGG WOULD APPRECIATE IF YOU COULD PREPARE ITINERARY FOR VARIOUS  
MISSION MEMBERS INCLUDING MEETINGS WITH CONCERNED AUTHORITIES SUCH  
AS PLANNING UNIT, GEOLOGICAL SURVEYS DEPT., MINISTRY OF PLANNING,  
ELCOM, ENERGY DEVELOPMENT CORPORATION, PRICE BOARD AND  
REPRESENTATIVES OF SOME OF THE OIL COMPANIES OPERATING IN PNG.  
MISSION WOULD BE GRATEFUL TO RECEIVE LATEST INFORMATION ON VARIOUS  
ENERGY SUBSECTORS AND ORGANIZATIONS INCLUDING FINANCIAL STATUS,  
COSTS AND BENEFITS OF VARIOUS SCHEMES, ENERGY CONSUMPTION, ETC.  
MISSION ENVISAGES TRAVEL WITHIN PNG ESPECIALLY TO HIGHLANDS TO SEE  
RAMU COMPLEX AND ALCOHOL PLANTS AND OTHER PROJECTS AND AREAS THAT  
YOU CONSIDER APPROPRIATE. WITH THE EXCEPTION OF ODY AND TATOM  
MISSION WOULD LIKE TO VISIT BOUGAINVILLE COPPER MINE AND POSSIBLY  
THE PURARI HYDROELECTRIC SITE.  
HHH WOULD APPRECIATE YOUR INFORMING CONCERNED PARTIES AND MAKING  
NECESSARY TRANSPORT ARRANGEMENTS IN PORT MORESBY AND FOR FIELD  
TRIPS. THANKS AND REGARDS, MASOOD AHMED, ACTING CHIEF, ENERGY  
ASSESSMENT DIVISION, WORLDBANK

## NOT TO BE TRANSMITTED

SUBJECT:

PNG: Energy Assessment Mission

CLEARANCES AND COPY DISTRIBUTION:

cc & cleared with: Mr. Burns, AEA  
Mr. Tsantis

DRAFTED BY:

MAHmed:ams.

AUTHORIZED BY (Name and Title)

Masood Ahmed

DEPARTMENT:

Acting Chief, EGYEA

SECTION BELOW FOR USE OF CABLE SECTION

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B351 4-1 R929 1 10/21/81 05:27 EE/2

89658 WORLDBANK WSH

RECEIVED

1981 OCT 21

my chum with  
outgoing response.

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/ GRN1600 MBP0849

DD IBF

.PAPUA (IBRD) 200408GMT

MBP0849-10

FOR JULIAN BHARIER ENERGY DEPT INTBAFRAD

AA. PLEASE CONFIRM ARRIVAL OF ENERGY ASSESSMENT MISSION NOVEMBER  
NINTH.

BB. PLEASE ADVISE STAFFING AND TERMS OF REFERENCE.

CC. DO YOU ENVISAGE TRAVEL WITHIN PNG QUESTION

REGARDS (KEN NEWCOMBE DEPT OF MINERALS AND ENERGY PAPUA NEW  
GUINEA WABPRO NE222111)

COL MBP0849-10 NE22211

;10210430

October 15, 1981

Mr. P. Reeler  
Chief Executive  
Oilcom (Malawi) Ltd.  
P. O. Box 469  
Blantyre, Malawi

Dear Mr. Reeler,

I would like to thank you and Mr. Lesley for taking the time to meet with me during our recent energy sector assessment mission to Malawi. I found our discussions to be both stimulating and productive, and I am sure that our subsequent analysis of Malawi's energy problems will benefit from it.

Since our return to Washington, we have begun analyzing the data and information that we collected during our mission. We hope to complete this work early next year and we will then send a draft of the Energy Assessment Report to the Government for their comments. Subsequently, I hope to return to Malawi to discuss this draft with the concerned agencies and I hope that I could meet with you again for any comments or suggestions that you or your staff might have.

Thank you once again for all your help.

Yours sincerely,

Masood Ahmed  
Energy Department

cleared with and cc: Mr. Peter Hall

MAhmed:ams.-



October 15, 1981

Dr. W. K. Lipato  
Principal Secretary  
Ministry of Forestry & Natural Resources  
Lilongwe, Malawi

Dear Dr. Lipato,

I would like to thank you for taking the time to meet with us during our recent energy sector assessment mission. We particularly appreciated the fact that you could meet with us at such short notice and despite your tight travel plans. However, I am sure you will agree that the issues facing the Government in the energy sector are both important and urgent. For our own part, we found our discussion of these issues with you to be both stimulating and extremely useful.

I would also be grateful if you could extend our appreciation and thanks to your colleagues in the Ministry who provided the mission with invaluable cooperation and assistance. Our discussions with Mr. May, Mr. Ndove and his colleagues in the wood energy division, Dr. Johnson and his colleagues in the geological survey, to name but a few, were of great help to the mission in carrying out its tasks.

Since our return to Washington, we have begun analyzing the data and information that we collected during our mission. We hope that we will be able to complete this work early next year and will then send a draft of the Energy Assessment Report to the Government for their comments. Subsequently, I hope to return to Malawi to discuss this draft with the concerned agencies, and I hope that I could meet with you again for any comments or suggestions that you or your staff might have.

Thank you once again for all your help.

Yours sincerely,

Masood Ahmed  
Energy Department

cc & cleared with: Mr. P. Hall

MAhmed:ams.-



October 15, 1981

Mr. G. Kalinga  
Senior Deputy Permanent Secretary  
Ministry of Finance  
Government of Malawi  
Capital City  
Lilongwe 3, Malawi

Dear Godfrey,

I would like to thank you and your colleagues for the cooperation and courtesy you extended to our recent energy assessment mission. In particular, the work done by the Energy Inventory Team in EPD both before our arrival and during our mission, enabled us to cover a great deal of ground during our limited stay. I hope that you will extend to Messrs. Mponela, Kayire, Tembo and Sungani our appreciation and gratitude.

I would also like to thank you personally for the time that you were able to devote to our mission. As usual, I found these discussions both stimulating and productive and I am sure that our subsequent analysis of Malawi's energy issues will benefit from it.

Since our return to Washington, I have had the opportunity to discuss some of the mission's principal findings with Messrs. Bobe and Soko and I believe that they have also been reviewed with Mr. Kakhobwe and the other members of the Malawian delegation to the Annual Meetings. We are now beginning our analysis of the data and other information we obtained during the course of the mission and I am confident that we can proceed on schedule with the preparation of the energy assessment report. Subsequently, I hope to return to Malawi early next year to discuss a draft of the report with yourself and your colleagues.

Thank you once again for all your help.

Best regards,

Masood Ahmed  
Energy Department

MAhmed:ams.-



October 15, 1981

Mr. N. S. Husemeyer  
General Manager  
Malawi Railways Ltd.  
P. O. Box 5144  
Limbe, Malawi

Dear Mr. Husemeyer,

I would like to thank you and Mr. Gordon for taking the time to meet with my colleague, Mr. Alexander, and myself during our recent energy sector assessment mission to Malawi. I found our discussions to be both stimulating and productive, and I am sure that our subsequent analysis of Malawi's energy problems will benefit from it.

Since our return to Washington, we have begun analyzing the data and information that we collected during our mission. We hope to complete this work early next year and we will then send a draft of the Energy Assessment Report to the Government for their comments. Subsequently, I hope to return to Malawi to discuss this draft with the concerned agencies, and I hope that I could meet with you again for any comments or suggestions that you or your staff might have.

Thank you once again for all your help.

Yours sincerely,

Masood Ahmed  
Energy Department

cleared with & cc: Mr. Peter Hall



October 15, 1981

Mr. L. S. Msiska  
Principal Secretary  
Department of Statutory Bodies  
Office of the President & Cabinet  
Private Bag 301  
Capital City  
Lilongwe, Malawi

Dear Mr. Msiska,

I would like to thank you and your colleagues in the Department for taking the time to meet with us during our recent energy sector assessment mission. I found our discussions to be both stimulating and productive, and I am sure that our subsequent analysis of Malawi's energy problems will benefit from it.

Since our return to Washington, we have begun analyzing the data and information that we collected during our mission. We hope that we will be able to complete this work early next year, and we will then send a draft of the energy assessment report to the Government for their comments. Subsequently, I hope to return to Malawi to discuss this draft with the concerned agencies and I hope that I could meet with you again for any comments or suggestions that you or your staff might have.

Thank you once again for all your help.

Yours sincerely,

Masood Ahmed  
Energy Department

cc & cleared with: Mr. P. Hall

MAhmed:ams.-



October 15, 1981

Mr. T. S. Mangwazu  
Managing Director  
Press (Holdings) Ltd.  
Press House, P. O. Box 30238  
Lilongwe, Malawi

Dear Mr. Mangwazu,

I would like to thank you for taking the time to meet with us during our recent energy sector assessment mission. I found our discussion to be both stimulating and productive, and I am sure that our subsequent analysis of Malawi's energy problems will benefit from it. I would also be grateful if you could extend our thanks and appreciation to your colleagues, Messrs. Kambouwa, Ratnam, Kamanga and Mamba for all their cooperation and assistance.

Since our return to Washington, we have begun analyzing the data and information that we collected during our mission. We hope to complete this work early next year and will then send a draft of the Energy Assessment Report to the Government for their comments. Subsequently, I hope to return to Malawi to discuss this draft with the concerned agencies and I hope that I could meet with you again for any comments or suggestions that you or your staff might have.

Thank you once again for all your help.

Yours sincerely,

Masood Ahmed  
Energy Department

cleared with & cc: Mr. P. Hall  
MAhmed:ams.-



October 15, 1981

Mr. J. S. Ascherson  
General Manager  
ESCOM  
P. O. Box 30224  
Blantyre, Malawi

Dear Mr. Ascherson,

I would like to thank you and your colleagues in ESCOM for taking the time to meet with us during our recent energy sector assessment mission. Both Mr. Bailey and I found our discussions to be both stimulating and productive, and I am sure that our subsequent analysis of Malawi's energy problems will benefit from it.

Since our return to Washington, we have begun analyzing the data and information that we collected during our mission. We hope that we will be able to complete this work early next year, and we will then send a draft of the energy assessment report to the Government for their comments. Subsequently, I hope to return to Malawi to discuss this draft with the concerned agencies and I hope that I could meet with you again for any comments or suggestions that you or your staff might have.

Thank you once again for all your help.

Yours sincerely,

Masood Ahmed  
Energy Department

cc & cleared with: Mr. P. Hall

MAhmed:ams.-



October 15, 1981

Mr. J. Mulange  
Principal Secretary  
Ministry of Trade & Industry  
Lilongwe, Malawi

Dear Mr. Mulange,

I would like to thank you for taking the time to meet with us during our recent energy sector assessment mission. I found our discussion to be both stimulating and productive, and I am sure that our subsequent analysis of Malawi's energy problems will benefit from it. I would also be grateful if you could extend our thanks and appreciation to your colleagues, Messrs. Mumthali, Grant, Ndisale and Edwards for all their cooperation and assistance.

Since our return to Washington, we have begun analyzing the data and information that we collected during our mission. We hope that we will be able to complete this work early next year and we will then send a draft of the energy assessment report to the Government for their comments. Subsequently, I hope to return to Malawi to discuss this draft with the concerned agencies and I hope that I could meet with you again for any comments or suggestions that you or your staff might have.

Thank you once again for all your help.

Yours sincerely,

Masood Ahmed  
Energy Department

cc & cleared with: Mr. Peter Hall

MAhmed:ams.-



# Record Removal Notice

<b>File Title</b> Masood Ahmed - Chronological File - 1981		<b>Barcode No.</b>  30450190		
<b>Document Date</b> 15 October, 1981	<b>Document Type</b> Memorandum			
<b>Correspondents / Participants</b> To: . de Kievit, PMD From: Masood Ahmed, EGYEA				
<b>Subject / Title</b> Interview Evaluation of Mr. D. McGlue				
<b>Exception(s)</b> Personal Information				
<b>Additional Comments</b>		<p>The item(s) identified above has/have been removed in accordance with The World Bank Policy on Access to Information or other disclosure policies of the World Bank Group.</p> <table border="1"><tr><td><b>Withdrawn by</b> Sherrine M. Thompson</td><td><b>Date</b> November 03, 2022</td></tr></table>	<b>Withdrawn by</b> Sherrine M. Thompson	<b>Date</b> November 03, 2022
<b>Withdrawn by</b> Sherrine M. Thompson	<b>Date</b> November 03, 2022			



4342 Cenelect IW  
Telex

Oct. 13, 1981  
74545

CENTRAL ELECTRICITY BOARD

PORT LOUIS, MAURITIUS

FOR MR. LABAT. MANY THANKS YOUR LETTER SEPT. 24 ACKNOWLEDGING  
RECEIPT OF DRAFT ENERGY SECTOR REPORT. WE LOOK FORWARD TO RECEIVING  
YOUR COMMENTS. HOWEVER, WOULD BE GRATEFUL IF YOU COULD TRANSMIT  
THESE AT THE EARLIEST POSSIBLE DATE AS THE GOVERNMENT OF MAURITIUS  
HAVE REQUESTED THE BANK IN RECENT MEETINGS HERE IN WASHINGTON TO  
PROCEED IMMEDIATELY WITH THE FURTHER PROCESSING OF THIS REPORT.  
REGARDS, SCHOTT, EAST AFRICA COUNTRY PROGRAMS DEPARTMENT, WORLDBANK

MAURITIUS: Energy Sector Report  
cleared with & cc: Mr. Blay

MAhmed:ams.-

J. Shaffer, Acting Division Chief  
Energy Assessments

October 9, 1981

Mr. R. Bheenick  
Director of Planning  
Ministry of Economic Planning  
& Development  
Port Louis, Mauritius

Dear Mr. Bheenick:

Re: MAURITIUS - Issues & Options in the Energy Sector  
(Bank Report No. 3510-MAS)

Thank you for your letter of September 17, 1981, acknowledging receipt of a draft of the above report and setting out your preliminary comments on it. I am happy to note that you endorse the major findings and recommendation of the report and I agree with your assessment that the most urgent task facing the Government now is to ensure that the Energy Planning Unit in your Ministry is fully operational and that the required technical assistance for the unit is put in place at the earliest possible date.

As you know, our initial plans were that Mr. Ahmed of the Bank's Energy Department would visit Mauritius in late October to discuss the report's findings with yourself and other interested parties and to obtain your Government's clearance for the distribution of the report in its final form. However, I understand that in your discussions with Mr. Ahmed and members of my division here in Washington last week, you suggested that it would be more opportune for Mr. Ahmed to visit Mauritius in January next year by which time the results of the ongoing consultant study on the more effective utilization of bagasse as an energy source would also be available. I agree with your suggestion and we have tentatively rescheduled Mr. Ahmed's mission for this later date.

At your meeting, you also discussed the timetable for the further processing and distribution of this report. You indicated that the Government of Mauritius would like the final version of the report to be distributed as early as possible as this would facilitate your approaching the UNDP and other donor agencies for the provision of technical assistance.



In view of the fact that your Government agrees with the main findings and conclusions of the report, and given the urgent need to begin putting together a technical assistance package for the energy sector, the Bank would be happy to proceed with the final processing of this report as soon as we receive your written or telexed confirmation that this is acceptable to your Government.

I would also be grateful if you could let us have at the same time the final figures for the 1980 oil import bill, for which only provisional estimates were available at the time of the mission.

I look forward to hearing from you at your earliest convenience.

Yours sincerely,

Stephen C. Schott  
Division Chief  
Country Programs II  
East Africa Region

cl & cc: Mr. Blay

cc: Messrs. Devaux, Erkmen

cc: Messrs. Razafindrabe  
Jesseramsing

MAhmed:yj

## WORLD BANK OUTGOING MESSAGE FORM (Telegram, Cable, Telex)

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Class of Service: **Telex** Date: **Oct. 9, 1981**  
Telex No.: **796-44456** Originator's Ext.: **74545**

12

10

TO **INTBAFRAD**CITY/COUNTRY **JAKARTA, INDONESIA**

FOR CHEETHAM AND ZINCIR. PLEASED TO CONFIRM THAT PRASAD AND I WILL BE  
ARRIVING IN JAKARTA ON SUNDAY, OCTOBER 25 FOR ONE WEEK TO DISCUSS THE ENERGY  
ASSESSMENT REPORT. WE WILL BE STAYING AT THE BOROBOUDOUR HOTEL. REGARDS,  
BHARIER, ENERGY DEPARTMENT

END  
OF  
TEXT

## NOT TO BE TRANSMITTED

SUBJECT:

**INDONESIA: Energy Assess. mission**

CLEARANCES AND COPY DISTRIBUTION:

**cc: Mr. R. Stern (AEA)**

DRAFTED BY:

**MAhmed:ams.-**

AUTHORIZED BY (Name and Signature)

**Masood Ahmed**

DEPARTMENT:

**Acting Chief, EGYEA**SECTION BELOW FOR USE OF CABLE SECTION  
CHECKED FOR DISPATCH



October 8, 1981

Mr. Gladstone Kayire  
Economic Planning Division  
Office of the President and Cabinet  
Private Bag 301  
Capital City  
Lilongwe 3, Malawi

Dear Gladstone,

First of all, let me take this opportunity to thank you and the other members of the Energy Inventory Team for your invaluable help and cooperation during our recent energy assessment mission. Both the work done by the team prior to our arrival and during our stay enabled us to cover a lot more ground than we would have been able to do otherwise. Needless to say, your hospitality also made our mission much more enjoyable.

In return, I am happy to send you another copy of the Pakistan Energy Sector Report which I had promised. I have also obtained the subscription details for the Petroleum Economist Journal which you were interested in. This is a monthly journal published in the United Kingdom which provides a good overview of recent petroleum market developments and also includes some useful price information. The annual subscription for this journal is \$78, surface mail, or \$96, air mail. The address to write to for further information is

107 Charterhouse Street  
London EC1M6AA  
Cables: Petrolpers, London EC

Another source of useful information you might consider is the monthly OPEC Bulletin which is available (probably free of charge) from the

Organization of the Petroleum  
Exporting Countries  
Obere Donaustrasse 93  
1020 Vienna, Austria

Mr. Gladstone Kayire

- 2 -

October 8, 1981

I hope the above information is useful to you. I look forward to receiving your note on some of the institutional issues we discussed.

Regards,

Masood Ahmed

MAhmed:ams.-

Enclosure



*chron*

Ursula:

Your Haiti Report is an excellent piece of work. Congratulations.

I have some minor comments on the executive summary which you might wish to consider:

para. 1.07 line 1. The 5.6% growth rate must be annual.

para. 1.23 4th line from end. Is this intensive or extensive?

para. 1.28 (b) change "prevent" to "discourage"?

(c) this needs to be clarified. You might include something about the retail price of \$2.15/gallon being relatively low in relation to many other LDC's despite the fact that there is already 100% tax.

para. 1.29 It is not clear why heavy fuel oil should be a priority target for substitution or what fuel you have in mind as a replacement. Can we be more specific?

para. 1.31 You might change the last part of the first sentence - "as a covenant to "as a target by the Government & EdH in consultation with IDA". After all its their target as much as a project covenant.

para. 1.33 What percentage of total generation was actually accounted for by losses?

para. 1.37 Not clear. Will the cement factory end up using more energy or less? Is it the substitution of imported coal which is a problem or the general economic viability of the project.

para. 1.38 Why should the need to assess retrofitting possibilities be dependent on the growth potential of specific industrial groups?

Masood

cc: Mr. Bharier

*M*

September 4, 1981

Julian:

1. Sri Lanka

(a) D.C. feels that we should get the Region's agreement/response to the issues paper. A meeting is probably not required; all we need is for Thalwitz and Wiehen to sign off on it for their respective departments.

(b) There's a letter to the UNDP resident representative in your box discouraging them from going into OTEC. Please clear. Andres will handle. You might wish to make it a bit stronger.

(c) I met with Borthwick and Cornelius Jansen, the senior economist in South Asia who's working on the SAL. We basically agreed that the energy focus of the SAL would be based on the assessment report's work and that the mission to discuss the report in December could overlap with their preparation mission.

We also talked about the regional review of the Issues Paper. Region doesn't appear to want a meeting but Shibusawa or Wiehen may send a note around next week saying that there will not be a formal review meeting but that any comments/suggestions/disagreements people have should be sent to us now so that they could be incorporated as appropriate in the white cover under preparation. Might follow up with Borthwick. Mohan has promised to send us soon a section on power pricing. Andres will follow up on this but may need some support from you to get things actually moving.

2. Mauritius. Green Cover is out. 20 copies have been sent to Paul Blay for transmittal to the government but the internal distribution and a copy for the UNDP resident representative and UNDP/NY still has to be organized.



3. Turkey. There's a note on your desk about financing the coal consultant which Strongman claims Chadenet promised (in June) we'd pay for. IPD's certainly getting all they can out of us.

4. Malawi. TOR's have been cleared with Hall and should be sent out today. Otherwise will be circulated on Tuesday.

5. Energy Components. Ali is doing a table for the future program to go on the back of the memo.

6. Otherwise everything appears to be under control. I should be back in Washington on 23rd and will probably come in on the 25th, but call me at home before if there's something.

Regards,

Masood

Mrs. V. Nagarajan, Parking Office

September 3, 1981

Masood Ahmed, EGYEA

Request for transfer of parking space

1. Following our conversation on Monday, this is to confirm that I would like to have my parking allocation transferred from my current location at 1709 New York Avenue to 1800 G Street, N.W.

2. I would be grateful if you could add my name to the waiting list for the new address.

MAhmed:ams.-



WORLD BANK OUTGOING MESSAGE FORM (Telegram, Cable, Telex)  
IMPORTANT (PLEASE READ INSTRUCTIONS BELOW BEFORE TYPING FORM.)

Sept. 1, 1981

Class of Service: \_\_\_\_\_ Date: \_\_\_\_\_

Telex No \_\_\_\_\_ Originators Ext: 74544 \_\_\_\_\_

10

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START

1 HERE TO

FOR BOBE, COPY KAKHOBWE

CITY/COUNTRY

MINFINANCE, LILONGWE, MALAWI

MESSAGE NO

AAA RE ENERGY SECTOR ASSESSMENT MISSION. PLEASED TO CONFIRM THAT  
THE ABOVE MISSION PROPOSES TO BEGIN WORK IN LILONGWE ON SEPT. 7  
FOR APPROXIMATELY TWO AND HALF WEEKS. PROPOSED MISSION COMPOSITION  
AND INDIVIDUAL ARRIVAL DATES ARE AS FOLLOWS: MR. M. AHMED,  
MISSION LEADER (PAKISTANI NATIONAL) ARRIVE BLANTYRE SEPT. 6 BY AIR  
ZIMBABWE FLIGHT 760. MR. P. HALL, LOAN OFFICER (AMERICAN NATIONAL)  
AND MR. G. COLLINS, ENERGY PLANNER (CANADIAN NATIONAL) BOTH ARRIVE  
BLANTYRE SEPT. 6 BY AIR ZIMBABWE FLIGHT 758. MR. A. BAILEY,  
POWER SECTOR SPECIALIST, CONSULTANT (BRITISH NATIONAL) ARRIVE  
BLANTYRE SEPT. 5 BY OM 366. MR. M. ALEXANDER, COAL SPECIALIST,  
CONSULTANT (BRITISH NATIONAL) WILL JOIN MISSION ON SEPT. 13, FLIGHT  
TO BE CONFIRMED. MR. BAILEY WILL TRAVEL TO LILONGWE ON SEPT. 6.  
BBB MESSRS. AHMED, HALL AND COLLINS WILL TRAVEL TO LILONGWE ON  
SEPT. 7 BY OM 210 ARRIVING LILONGWE 0755 AM. SUGGEST THAT THEY  
PROCEED DIRECTLY UPON ARRIVAL IN LILONGWE TO YOUR OFFICE TO JOIN  
MESSRS. BAILEY AND GRAHAM, YOURSELF AND MEMBERS OF ENERGY INVENTORY

/c

END  
OF  
TEXT

NOT TO BE TRANSMITTED

SUBJECT:

DRAFTED BY:

CLEARANCES AND COPY DISTRIBUTION:

AUTHORIZED BY (Name and Signature):

DEPARTMENT:

SECTION BELOW FOR USE OF CABLE SECTION  
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**WORLD BANK OUTGOING MESSAGE FORM (Telegram, Cable, Telex)**  
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 Telex No: \_\_\_\_\_ Originators Ext: \_\_\_\_\_

12

10

START  
1 HERE

CITY/COUNTRY

MESSAGE NO

TO TEAM FOR FIRST WORKING SESSION AT WHICH ENERGY INVENTORY GROUP  
 WOULD BEGIN THEIR BRIEFING FOR THE MISSION ON THE PROGRESS OF  
 THEIR RECENT WORK AND THE PRELIMINARY IDENTIFICATION OF ISSUES  
 FOR MISSION'S REVIEW. THE MISSION'S PROGRAM FOR THE REMAINDER OF  
 THE WEEK WOULD ALSO BE WORKED OUT THEN WITH THE ENERGY INVENTORY  
 GROUP AND YOURSELF. HOWEVER, WOULD BE GRATEFUL IF YOU COULD  
 INFORM RELEVANT STAFF OF ESCOM THAT MR. BAILEY WOULD PROBABLY BE  
 RETURNING TO BLANTYRE ON WEDNESDAY, SEPT. 9 TO BEGIN WORKING WITH  
 THEM ON POWER SECTOR ISSUES. PLEASE CONFIRM IF PROPOSED TIMING,  
 STAFFING AND PROGRAM FOR MISSION IS CONVENIENT. THANKS AND  
 REGARDS, REESE, WORLDBANK

END  
OF  
TEXT

NOT TO BE TRANSMITTED

SUBJECT

**MALAWI: Energy Sector Mission**

CLEARANCES AND COPY DISTRIBUTION

Cld with and cc: Messrs: Hall, King  
 cc: Messrs. J. Bharier, EGY  
 M. Ahmed, EGY

DRAFTED

**MAhmed**

and Signature:

**David G. Reese**

**Division Chief, EA1**

CHECKED FOR DISPATCH





# Record Removal Notice

<b>File Title</b> Masood Ahmed - Chronological File - 1981		<b>Barcode No.</b>  30450190		
<b>Document Date</b> 31 August, 1981	<b>Document Type</b> Memorandum			
<b>Correspondents / Participants</b> To: . de Kievit, PMD From: Masood Ahmed, EGYEA				
<b>Subject / Title</b> Interview with Dr. Ernesto Terrado				
<b>Exception(s)</b> Personal Information				
<b>Additional Comments</b>		<p>The item(s) identified above has/have been removed in accordance with The World Bank Policy on Access to Information or other disclosure policies of the World Bank Group.</p> <table border="1"><tr><td><b>Withdrawn by</b> Sherrine M. Thompson</td><td><b>Date</b> November 03, 2022</td></tr></table>	<b>Withdrawn by</b> Sherrine M. Thompson	<b>Date</b> November 03, 2022
<b>Withdrawn by</b> Sherrine M. Thompson	<b>Date</b> November 03, 2022			



# Record Removal Notice

<b>File Title</b> Masood Ahmed - Chronological File - 1981		<b>Barcode No.</b>  30450190		
<b>Document Date</b> 31 August, 1981	<b>Document Type</b> Memorandum			
<b>Correspondents / Participants</b> To: Mr. P. A. Dahlberg, Insurance From: Masood Ahmed, EGYEA				
<b>Subject / Title</b>  Medical Expenses Incurred on Mission				
<b>Exception(s)</b> Personal Information				
<b>Additional Comments</b>		<p>The item(s) identified above has/have been removed in accordance with The World Bank Policy on Access to Information or other disclosure policies of the World Bank Group.</p> <table border="1"><tr><td><b>Withdrawn by</b> Sherrine M. Thompson</td><td><b>Date</b> November 03, 2022</td></tr></table>	<b>Withdrawn by</b> Sherrine M. Thompson	<b>Date</b> November 03, 2022
<b>Withdrawn by</b> Sherrine M. Thompson	<b>Date</b> November 03, 2022			



Mr. John T. Ducker, Program Coordinator, EANVP

July 2, 1981

Masood Ahmed, Acting Chief, EGYEA

FY82 Energy Sector Work - Forms 700

1. Attached please find Forms 700 for the countries in your region in which energy sector assessments are planned for FY82. The forms for Kenya, Zimbabwe, Rwanda, Burundi and Mauritius are for carry-over work which was started in FY81. New work is planned for Malawi, Tanzania, Sudan and Zambia. The scope and timing of the Malawi mission has already been agreed. For the other missions, however, these aspects still need to be discussed within the Bank and agreed with the respective Governments.

2. In the meantime, I would be grateful if you could circulate these for approval and initial to the concerned regional staff. Following that, I will send these forms to IPD and other CPS staff for their initials.

Attachments

cc: Mr. Skaff, EAP (w/copy of attachments)

MAhmed:ks

TITLE: ENERGY SECTOR ASSESSMENT										REPORT CODE 2BUIGGSY1		FINAL INTERNAL COVER Green Cover	
TYPE OF REPORT Formal				ACTIVITY SRA/EAU		COUNTRY BURUNDI							
SCHEDULE		JULY/ ORIGINAL	PREVIOUS	CURRENT	REASONS FOR CHANGES IN SCHEDULE			RESPONSIBLE DEPT./DIV.: 307/50					
MAIN MISSION DEPARTURE DATE		-	03/81	04/81	Work on other assignments.			<p>Report progressing as scheduled. White Cover will be circulated for working level review in July 1981.</p>					
FINAL DRAFT DATE		-	06/81	07/81									
GRAY COVER DATE (If any)		-	09/81	10/81									
					TIMING OF MISSION AGREED WITH GOVT: YES X NO								
STAFFING SPECIALTIES		DEPT CODE	NON- BANK SOURCE	STAFFWEEKS				NAME	CON- FIRMED				
				FIELD	HQ	FY 81	FY 82		FY	YES	NO		
OWN DEPT./REGION													
Energy Economist Policy Inst. Spec.		307 307	Cons.	2 2	5 4	5 6	2 -		D. Hughart C. Tobias	X X			
SUPPORT REQUESTED													
Power Engineer Country Economist (Programs)		126		1 2	1 2	2 3	1		C. Killoran A. Eguren	X X			
TOTAL STAFFWEEKS (SUPPORT & OWN):				16	3								
PREPARING OFFICER D. Hughart													
DATE MM/YY		INITIALS											
		PREP OFFICER	PROG	PROJ	RVP								
06/81													

rpo

6/30



TITLE: Energy Assessment										REPORT CODE		FINAL INTERNAL COVER Green	
TYPE OF REPORT Formal Sector Report					ACTIVITY SRA/EAU			COUNTRY Zambia					
SCHEDULE		JULY/ ORIGINAL	PREVIOUS	CURRENT	REASONS FOR CHANGES IN SCHEDULE				RESPONSIBLE DEPT./DIV.: 307/50				
MAIN MISSION DEPARTURE DATE		-	-	n/s 82					COMMENTS  Government has requested assessment under UNDP project.  Country selection was discussed with Bronfman, Ware and Gulhati by Bharier and agreed.  Scope and timing of the mission still to be firmed up. For programming purposes, we are scheduling this for the 4th quarter of FY82.				
FINAL DRAFT DATE white		-	-	n/s 82									
GRAY COVER DATE (If any) green		-	-	n/s 82									
					TIMING OF MISSION AGREED WITH GOVT:							YES	NO X
STAFFING SPECIALTIES		DEPT CODE	NON- BANK SOURCE	STAFFWEEKS					NAME	CON- FIRMED			
				FIELD	HQ	FY 82	FY 83	FY		YES	NO		
OWN DEPT./REGION		307							Consultant " "		X " "		
Energy Economist				2	4	6							
Energy Technologist				3	7	10	3						
Conservation Specialist				3	3	6							
New Energies Specialist				3	3	6							
Petroleum Sector Specialist				2	2	4							
SUPPORT REQUESTED									Killoran Hansen		X X		
Power Engineer				3	3	6							
Programs Country Economist				3	5	8							
Coal Specialist				2	2	4							
TOTAL STAFFWEEKS (SUPPORT & OWN):						50	3						
				DATE MM/YY		PREP OFFICER		INITIALS		PROG	PROJ	RVP	
				06/81 JB									

TITLE: Energy Assessment						REPORT CODE		FINAL INTERNAL COVER Green			
TYPE OF REPORT Formal Sector Report					ACTIVITY SRA/EAB		COUNTRY Sudan				
SCHEDULE		JULY/ ORIGINAL	PREVIOUS	CURRENT	REASONS FOR CHANGES IN SCHEDULE			RESPONSIBLE DEPT./DIV.: 307/50			
MAIN MISSION DEPARTURE DATE		-	-	n/s 82				COMMENTS  Scope and timing of this mission is to be firmed up following preliminary discussions with Government. For programming purposes, we are tentatively scheduling this for the 4th quarter of FY82.			
FINAL DRAFT DATE white		-	-	n/s 82							
GRAY COVER DATE (If any) green		-	-	n/s 82							
Detailed outline and staffing		-	-	01/82							
					TIMING OF MISSION AGREED WITH GOVT:		YES	NO X			
STAFFING SPECIALTIES		DEPT CODE	NON- BANK SOURCE	STAFFWEEKS			NAME	CON- FIRMED			
				FIELD	HQ	FY 82		FY 83	FY	YES	NO
OWN DEPT./REGION		307									
Energy Economist				4	8	12					
Policy/Inst. Specialist				2	4	6					
Conservation Specialist				2	4	6					
New Energies Specialist				2	4	6					
SUPPORT REQUESTED											
Power Engineer				2	4	6					
Fuelwood Specialist				2	3	5					
Programs Country Economist				2	4	6					
Refinery Specialist				2	2	4					
TOTAL STAFFWEEKS (SUPPORT & OWN):						51					
								PREPARING OFFICER J Bharier			
								DATE MM/YY			
								INITIALS			
								PREP OFFICER			
								PROG			
								PROJ			
								RVF			
								06/81 JB			



TITLE: Energy Assessment						REPORT CODE		FINAL INTERNAL COVER Green	
TYPE OF REPORT Formal Sector Report				ACTIVITY SRA/EAB		COUNTRY Tanzania			
SCHEDULE		JULY/ ORIGINAL	PREVIOUS	CURRENT	REASONS FOR CHANGES IN SCHEDULE			RESPONSIBLE DEPT./DIV.: 307/50	
MAIN MISSION DEPARTURE DATE		-	-	n/s 82				COMMENTS	
FINAL DRAFT DATE white		-	-	n/s 82					
GRAY COVER DATE (If any) green		-	-	n/s 82					
					TIMING OF MISSION AGREED WITH GOVT:		YES	NO X	
STAFFING SPECIALTIES		DEPT CODE	NON- BANK SOURCE	STAFFWEEKS				NAME	
				FIELD	HQ	FY 82	FY 83	FY	CON- FIRMED
OWN DEPT./REGION									YES NO
Energy Economist		307		3	7	10	3		
Policy Inst. Specialist				2	2	4	2		
Conservation Specialist				2	4	6	-		
New Energies Specialist				2	4	6	-		
Petroleum Sector Spec.				2	2	4	-		
SUPPORT REQUESTED									
Power Engineer				2	3	5			
Fuelwood Specialist				1	1	2			
Programs Country Economist				2	2	4	4		
Refinery Specialist				2	2	4	4		
TOTAL STAFFWEEKS (SUPPORT & OWN):						45	9		
PREPARING OFFICER J Bharier									
DATE MM/YY									INITIALS
PREP OFFICER									PROG
PROJ									RVP
06/81 JB									

TITLE: Energy Assessment										REPORT CODE		FINAL INTERNAL COVER Green	
TYPE OF REPORT Formal Sector					ACTIVITY SRA/EAB			COUNTRY MALAWI					
SCHEDULE		JULY/ ORIGINAL	PREVIOUS	CURRENT	REASONS FOR CHANGES IN SCHEDULE				RESPONSIBLE DEPT./DIV.: 307/50				
MAIN MISSION DEPARTURE DATE		-	-	9/81					COMMENTS  Mission will collaborate with USAID who are supplying a policy/institutions specialist for the mission.				
FINAL DRAFT DATE		-	-	1/82									
GRAY COVER DATE (If any)		-	-	4/82									
					TIMING OF MISSION AGREED WITH GOVT: YES NO X								
STAFFING SPECIALTIES		DEPT CODE	NON- BANK SOURCE	STAFFWEEKS					NAME	CON- FIRMED			
				FIELD	HQ	FY 82	FY 83	FY		YES	NO		
OWN DEPT./REGION		307	Cons. Cons. Cons.	3	8	11			M.Ahmed	x			
Energy Economist				3	7	10			G.Collins	x			
Energy Technologist				3	4	7			?		x		
Conservation Specialist				3	4	7			Wyatt		x		
Power Consultant				3	4	7			?		x		
Renewable Energy Specialist <i>Rural</i>				3	4	7					x		
SUPPORT REQUESTED		126		3	4	6			?		x		
Power Engineer				3	4	6			P.Hall	x			
Programs Country Econ./Loan Officer <i>con</i>				1	2	3			<i>Shangwe</i>				
TOTAL STAFFWEEKS (SUPPORT & OWN):				54									
PREPARING OFFICER Masood Ahmed													
DATE MM/YY		INITIALS											
		PREP OFFICER	PROG	PROJ	RVP								
6/81		Mahmed											



TITLE: Energy Assessment						REPORT CODE		FINAL INTERNAL COVER Green		
TYPE OF REPORT Formal				ACTIVITY SRA/EAB		COUNTRY Zimbabwe				
SCHEDULE		JULY/ ORIGINAL	PREVIOUS	CURRENT	REASONS FOR CHANGES IN SCHEDULE			RESPONSIBLE DEPT./DIV.: 307/50		
MAIN MISSION DEPARTURE DATE				06/15/81				COMMENTS  An Energy Sector Draft Report prepared by EAPW/EGY, completed in March 81. Energy Assessment mission in field now and examining the sector in more detail.		
FINAL DRAFT DATE white				10/81						
GRAY COVER DATE (If any) green				01/82						
					TIMING OF MISSION AGREED WITH GOVT:			YES X	NO	
STAFFING SPECIALTIES		DEPT CODE	NON- BANK SOURCE	STAFFWEEKS				NAME	CON- FIRMED	
				FIELD	HQ	FY 81	FY 82		FY 83	YES
OWN DEPT./REGION										
Energy Economist		307		7	3	10	14	-	Z. Mian	
Acting Division Chief		307		1	1	2	2	-	J. Bharier	X
Renewable Energy Spec.		256		4	-	4	6	-	A. Armar	X
Coal Specialist		-	yes	2	-	2	2	-	F. Kotschwar	X
SUPPORT REQUESTED										
Programs Sr. Economist			-	4	-	4	4	-	W. Maane	X
Power Engineer		126	-	4	-	4	5	-	A. Ceyhan	X
TOTAL STAFFWEEKS (SUPPORT & OWN):						26	33			
PREPARING OFFICER								Masood Ahmed		
DATE MM/YY		INITIALS								
		PREP OFFICER	PROG	PROJ	RVP					
06/81		MAhmed								





TITLE: Energy Sector Assessment										REPORT CODE		FINAL INTERNAL COVER Green		
TYPE OF REPORT Formal					ACTIVITY SRA/EAU			COUNTRY Rwanda						
SCHEDULE		JULY/ ORIGINAL	PREVIOUS	CURRENT	REASONS FOR CHANGES IN SCHEDULE				RESPONSIBLE DEPT./DIV.: 307/50					
MAIN MISSION DEPARTURE DATE		04/81	-	05/81					COMMENTS					
FINAL DRAFT DATE		07/81	-	07/81					Report progressing as scheduled. White cover will be circulated for working level review in July 1981.					
GRAY COVER DATE (If any)		10/81	-	10/81										
					TIMING OF MISSION AGREED WITH GOVT: YES NO X									
STAFFING SPECIALTIES		DEPT CODE	NON- BANK SOURCE	STAFFWEEKS				NAME	CON- FIRMED					
				FIELD	HQ	81 FY	82 FY		83 FY	YES	NO			
OWN DEPT./REGION		307				5	3	D. Hughart	X					
Energy Economist														
Policy Inst. Specialist (consultant)						6	2	C. Tobias	X					
SUPPORT REQUESTED		126				4		Killoran	X					
Power Engineer														
PREPARING OFFICER														
		DATE MM/YY	INITIALS											
			PREP OFFICER	PROG	PROJ	RVP								
TOTAL STAFFWEEKS (SUPPORT & OWN):						15	5			06/81	DH			

TITLE: Energy Sector Assessment						REPORT CODE		FINAL INTERNAL COVER Green Cover			
TYPE OF REPORT Formal				ACTIVITY SRA/EAU		COUNTRY Kenya					
SCHEDULE		JULY/ ORIGINAL	PREVIOUS	CURRENT	REASONS FOR CHANGES IN SCHEDULE			RESPONSIBLE DEPT./DIV.: 307/50			
MAIN MISSION DEPARTURE DATE			03/81	03/81				COMMENTS			
FINAL DRAFT DATE yellow			08/81	08/81							
GRAY COVER DATE (If any) Green			09/81	09/81							
					TIMING OF MISSION AGREED WITH GOVT: YES X NO						
STAFFING SPECIALTIES		DEPT CODE	NON- BANK SOURCE	STAFFWEEKS			NAME	CON- FIRMED			
				FIELD	HQ	FY 81		FY 82	FY		YES
OWN DEPT./REGION											
Energy Specialist		307				14	5		T. Byer		X
Energy Technologist		256	Cons.			14	10		G. Collins	X	
Rural Energy Spec.		307	Cons.			9	-		T. Tushack	X	
Power Engineer (UN)		307	Cons.			6	-		S. Smith	X	
SUPPORT REQUESTED											
Country Economist/Loan off.		123				9	1		R. Deen	X	
TOTAL STAFFWEEKS (SUPPORT & OWN):						52	16				
PREPARING OFFICER T. Byer											
DATE MM/YY						INITIALS					
						PREP OFFICER	PROG	PROJ	RVP		
06/81						Mahmed					

June 30, 1981 rpo



*Chron*

## OFFICE MEMORANDUM

TO: Mr. Bengt G. Sandberg, Chief, EA1DA

DATE: July 6, 1981

FROM: Masood Ahmed, Acting Chief, EGYEA SUBJECT: UGANDA: Energy Specialist for Economic Mission

1. With reference to your memorandum of June 30 on the above subject, I would like to confirm our support for the inclusion of an energy sector specialist in the forthcoming economic mission. Given our limited knowledge of the energy sector in Uganda and the inadequacy of relevant data which are likely to be available, the findings and conclusions of this mission would necessarily be of a very preliminary nature. Nevertheless, I think they would provide a useful frame of reference and starting point for more detailed work and serve to identify the major issues around which this further work should be focussed.
2. Unfortunately, given our existing mission and leave commitments, it does not appear possible for a staff member from this unit to join the economic mission in mid-August. However, we would certainly be happy to assist you in this work by helping to identify a suitable outside consultant, preparing his terms of reference and scope of work, and reviewing his draft reports. If you agree, we could start looking for a suitable consultant and I hope that we could identify one before the end of this month; the only proviso being that the current security situation in the country might restrict the number of willing candidates.
3. In the meantime, I think it would be useful if we could meet at your convenience with Mr. Baird, yourself and Mr. Ware of the Power Projects Division for a preliminary discussion on the scope and focus of the proposed work.

cc: Messrs. Kraske, Baird, EA1DA  
Sheehan, Bharier (o/r) with incoming, (EGY)

MAhmed:ams.-

## OFFICE MEMORANDUM

TO: Mr. Masood Ahmed, Acting Chief, Energy Assessment Unit

THROUGH: Bengt G. Sandberg *Q* Chief, EALDA

FROM: Mark Baird, Economist, EALDA *MB*

SUBJECT: UGANDA - Energy Specialist for Economic Mission

DATE: June 30, 1981

1. In response to a request from President Obote, the World Bank will be sending an economic mission to Uganda in mid-August. This will be the first full economic mission to Uganda since 1969, and follows a general improvement in the political and security situation since the elections in December 1980, and recent agreement with the Fund on a one-year Stand-By Arrangement. The mission will be responsible for preparing a formal Country Economic Memorandum: to update our knowledge of the Ugandan economy, assess the prospects for short- and medium-term economic development, and identify the key institutional and policy issues which will need to be addressed over the coming two to three years.

2. During a recent visit to Washington, the Planning Minister (Mr. Odaka) made a specific request to have an energy specialist included in the economic mission. There has not been a comprehensive review of the energy sector since the 1960s, and there is clearly an urgent need to reassess priorities in light of subsequent developments in world petroleum prices. Further, the demand for energy can be expected to rise sharply as the presently depressed economy is rehabilitated. As a result, the present surplus of electricity (which is sold to Kenya at very low prices) and low petroleum import levels (which absorbed only 16% of export earnings in 1979) cannot be sustained. The Government is, therefore, keen to evaluate the prospects for petroleum (exploration and refining), electricity and possibly coal development, and determining investment requirements over the next decade. Alternative sources for imported petroleum products (at present, Uganda imports all of its petroleum requirements) and means for financing them (e.g., through exports in the Middle East) also need to be reviewed.

3. This is clearly an important time for Uganda to begin this preliminary review of the energy sector, and we would hope to support them both through our sector work, as well as possibly through future projects. We would, therefore, give high priority to the Government's request to include an energy specialist on the economic mission, and would appreciate the assistance of your unit in freeing a suitable staff member, or helping with the recruitment of an outside consultant, for this assignment. If necessary, this initial reconnaissance could be followed up with a more comprehensive sector review at some later date.

cc: Messrs. Kraske, Yenai; Mesdames Johnson-Sirleaf, Berger

MBaird:emk



Mr. Yves Rovani, Director, EGY

July 2, 1981

Masood Ahmed, Acting Chief, EGYEA

MOROCCO: Energy Assessment Mission

1. Further to Mr. Carter's memorandum to you of June 25, I met with him on Monday to discuss the proposed energy assessment mission to Morocco. As you know, Morocco was one of the countries selected for an energy assessment in FY82 during the March/April Bankwide discussions of country selection criteria for our FY82 program. It still remains very much a part of our program and we intend to send an assessment mission there in January/February 1982. We have had to delay this from an earlier plan of a fall 1981 mission because at the discussion of priorities for the EMENA region it was agreed that energy sector work was more urgently required in Turkey, Yugoslavia and Romania.
2. In accordance with these priorities, the Turkey exercise is well under way and will extend into the fall and a mission is being scheduled to go to Romania in September/October. Given these commitments and our staff constraints, the earliest date which is possible for the Morocco mission is January 1982. However, there is no question of any indefinite delay in carrying out an energy assessment in Morocco, the importance of which is accepted by all the parties concerned. At the same time, it is equally important to ensure that adequate time and effort are allowed to prepare for this mission so that we can make the kind of contribution that is warranted by the importance of the energy sector in Morocco.
3. I explained this position to Mr. Carter and we agreed to proceed on the basis of a January mission although he indicated that he would obviously have preferred an earlier mission. I also told him that we would have been more than happy to resolve these questions at the informal meeting he called last Thursday, but the invitation he sent us for that meeting apparently was never received.
4. Finally, I explained to him that any earlier delays in signing Forms 700 by our Department stemmed only from the fact that the final allocation of responsibilities for energy sector work was not clarified until two weeks ago. I have now prepared and sent out these forms for all the EMENA countries in which we plan to work in FY82 to Mr. I. Hume and requested him to circulate them to all concerned regional staff for their approval and initial.

cc: Messrs. Bart, Carter, (EM2); Carmignani, Hume, (EMP)  
Sheehan, Bharier, (o/r), Hughart

Ms. Haug (IPD)

MAhmed:ks/ams.-



cc: Mr. Rao  
9/28 pm

July 1, 1981

Mr. M. Masihuddin  
Additional Secretary-in-Charge  
Ministry of Petroleum and Natural Resources  
Government of Pakistan  
Islamabad, Pakistan

Dear Mr. Masihuddin,

RE: PAKISTAN - Energy Planning Technical  
Assistance Project

As you know, over the past few months a number of Bank missions have discussed with yourself and your staff the possibility of Bank assistance in developing and financing an energy planning project. The main objectives of this project would be to support the preparation of a long term energy development, utilization and investment program and to ensure its efficient implementation. To achieve these objectives would require not only the strengthening of the planning capability at the level of the energy sector as a whole, but also of the planning and implementation capacity for the various energy subsectors.

When Philippe Bourcier's mission met with your Minister in May, it was agreed that the next step in the preparation of this project would be for the Bank to sketch out the possible components that could be included in the project. The attachment to this letter provides a preliminary list of these components and a first estimate of their likely costs.

It is important to emphasize that this list of components and the allocation of funds to each activity, will need to be firmed up in the course of discussions with your own staff and with the staff of other concerned agencies. Furthermore, we agree with the view expressed by your Minister that the funds provided by the Bank should be available on a flexible basis to finance specific technical assistance needs as they arise within the context of a pre-agreed overall framework. Accordingly, we have included at the outset an unallocated amount of \$1.0 million in the project to follow up on ongoing work. Including this sum and allowing for contingencies, the total project costs are estimated at about \$6.4 million.



Mr. M. Masihuddin

- 2 -

July 1, 1981

Funding for the project could come from one of the following alternatives:

- (i) UNDP funds with the Bank as executing agency;
- (ii) an energy planning project financed from the IDA allocation, or
- (iii) a more general technical assistance project, of which a large component would be energy planning, financed from the IDA allocation.

If the project outline is acceptable to your Government, a short pre-appraisal mission could be scheduled for August to further define the project's scope and focus. The preappraisal mission would also discuss with your staff the institutional and organizational arrangements that will have to be developed to ensure the project's success. You will appreciate that a number of Government and semi-autonomous agencies will have to play an important role in the implementation of this project. The early development of an appropriate institutional mechanism will ensure their successful and timely coordination.

Following the preappraisal mission we would schedule a full appraisal of the project in the late fall in which we may invite, with your agreement, the participation of staff from other institutions such as the UNDP and the ADB. The appraisal mission would, together with yourselves, develop terms of reference for the specific project components, staffing requirements, costs, institutional arrangements and an implementation schedule. Early expenditure on some project components could be financed from a Project Preparation Facility (PPF), following appraisal.

Finally, I would like to reiterate the importance that the Bank attaches to the development of an effective national energy planning capability in Pakistan. The Bank is ready to move rapidly in support of the Government's efforts in developing such a capability. I now look forward to your written response and reaction to the project scope outlined in this letter so that we can proceed further in developing this project.

Yours sincerely,

Yves Rovani  
Director  
Energy Department

KPalmer/MAhmed:ams.-

cc and cleared with in substance: Messrs. A. Elek, (ASA); F. Lamson-Scribner, (ASP); E. McCarthy (EGY)  
cc: Messrs. Bourcier, Bharier (o/r), (EGY), Clements, (ASA), Ms. Haug (IPD)



PAKISTAN ENERGY PLANNING TECHNICAL ASSISTANCE PROJECT  
PRELIMINARY LIST OF PROJECT COMPONENTS

1. At the Sector Level

(a) Ten-Year National Energy Plan (cost approximately \$1.2 million)

The project would provide finance for the strengthening of the energy planning capability of the Ministry of Petroleum and Natural Resources as well as other central coordinating agencies. It would provide an energy economist and short-term technical experts to assist the Ministry as well as training and back-up for Ministry staff. This project component would include the support described in the draft PC-1 prepared by DGER. Although the information required for effective planning will be developed through the sub-sector studies, it is important to ensure central coordination of policies and investment plans, and integration of energy into the national investment plan. The project would include a review of sector organization to ensure adequate institutional procedures are in place to coordinate policy decision-making and monitor program implementation.

(b) Demand Management (cost approximately \$0.6 million)

The project would include preparation of a detailed and costed program of energy conservation measures including energy audits of key energy intensive industries; review of relative energy prices and their implications for the pattern of fuel demand; review of cost-effective regulatory actions to reduce energy use, particularly in the transport sector. These studies will result in recommendations on energy savings and how the proposed conservation investments are to be financed and implemented. Energy demand would be analyzed by end-use and include consideration of price elasticities and substitution possibilities. Some work has already been done by ENAR Petrotech but much more is required, particularly in the area of quantifying the demand effects of alternative policy measures.

2. At the sub-sector level the definition of project components is at an early stage but is expected to include:

(a) Natural Gas (cost approximately \$0.5 million)

Funds for follow-up on the gas utilization study now underway including preparation of a coordinated gas investment plan; study of national gas distribution coordination; and follow-up of issues identified by the study. A short- and medium-term gas supply and demand study is now underway by Gas Development Corporation (GDC) financed by a PPF. This study will identify the relative cost of alternative gas supplies and the likely gas demand and hence form the basis for a gas utilization plan based on least cost supplies. One aspect of the study will review the economic feasibility of converting Guddu power plant to Mari gas, thereby increasing Sui supplies to gas users in the north of the country. The study is due to be completed by the end of 1981.



The present project would provide funds for follow-up on issues arising. It would also include funds for a review of policy and organizational issues in the sub-sector.

(b) Oil (cost approximately \$0.5 million)

Technical assistance to (i) review the desirable work programs on each of the areas under licence to OGDC; (ii) to prepare a realistic exploration and development investment plan for OGDC; (iii) to assist, as required, in establishing joint ventures with private partners to ensure that desirable exploration and development is efficiently carried out on terms that are reasonable to all parties. The project would also provide for a review of geological prospects elsewhere in Pakistan as a basis for judging the overall adequacy of exploration and production (including enhanced recovery). The project would help devise an oil sub-sector investment program of which the OGDC program would be one component. It would also help devise an action program to ensure the program was implemented.

(c) Coal (cost approximately \$0.5 million)

A feasibility study of using the Lakhra coal deposits for power generation is now underway financed by JICA. There will be a need for technical assistance follow-up in the following areas: preparation of a coal sub-sector investment program including review of relevant legislation (especially land law decisions); improving sub-sector organization; identification of the respective roles of the public and private sectors; and review of policy measures required to give effect to the investment program. The work would give particular emphasis to the relative cost of coal compared to the alternative (gas, hydro, nuclear).

(d) Electric Power (cost approximately \$1.0 million)

Using a range of assessments of demand for electric power for the period to about 2000, a coordinated plan for electric power generation transmission and distribution should be prepared and optimized. The preparation of this plan should consider all alternative power sources (including hydro, thermal and nuclear) and should coordinate work already undertaken, or in progress, by WAPDA, CIDA, UNDP (including the Kalabagh Feasibility Study) to prepare a long-range program. Power planning will be closely affected by the outcome of the primary fuel sub-sector studies, especially gas. These questions have already been discussed with WAPDA by our regional power projects' staff and terms of reference for such a study have been developed.

(e) Renewable Energy Planning (cost approximately \$0.5 million)

Preparation and execution of a survey of renewable energy forms and uses to update the work by DGER in 1974. Particular attention should be paid to projecting the likely requirements of, and supply prospects for fuelwood in coordination with GOP forestry agencies at the Federal and Provincial levels. This project component should result in preparation of a phased and costed investment plan for renewable energy. It should also include a component for training staff for program implementation.

3. Summary Project Cost

<u>Sector Level</u>	<u>Cost - \$</u>
Plan formulation (including organization review)	1,200,000
Demand Management	600,000
<u>Sub-sector Level</u>	
Natural Gas	500,000
Oil	500,000
Coal	500,000
Electric Power	1,000,000
Renewable Energy	500,000
<u>Sub-total</u>	<u>4,800,000</u>
Unallocated (follow-up)	1,000,000
Contingencies	600,000
<u>TOTAL</u> <u>=====</u>	<u>6,400,000</u> <u>=====</u>



Distribution List

July 1, 1981

M. Ahmed, Acting Chief, EGYEA

INDONESIA: Draft Energy Sector Assessment Report

1. Attached please find the yellow cover draft of the above report for your review.
2. This draft incorporates the comments received at the working level review meeting.
3. In view of the fact that this report has been promised to the Government by the end of July, I would be grateful if I could have your comments on this report by cob Wednesday, July 8. In the light of these comments a departmental review meeting could be held at the end of next week prior to the circulation of the report to the Region and other CPS staff.

Distribution List

Messrs. Sheehan  
Sadove  
Bourcier  
McCarthy (2)  
Fish  
Dosik  
Ms. Julius  
Gillette  
Pryke

Attachment

MAhmed:ams.-

Distribution List

July 1, 1981

Masood Ahmed, Acting Chief, EGYEA

MAURITIUS: Energy Assessment Report. Yellow Cover Review Meeting

1. Mr. Sheehan will chair a meeting on Tuesday, July 7 at 2:30 p.m. in Room D-556 to review the above report, a copy of which was sent to you on Monday, June 22. I would be grateful if you or a representative from your unit could attend. If you are unable to attend, please let me have your comments on this report by c.o.b. Monday, July 6.

Distribution List

Messrs. Rovani	Sheehan
Bourcier	Sadove
Fish	Dosik
Ristorcelli	Elejalde
Ms. Julius	Gillette
Pryke	Byer
Collins	

MA Ahmed:ams.-



June 30, 1981

Mr. Andrew Barnett  
International Development Research Center  
60 Queen Street  
Ottawa, K1P 5Y7, Canada

Dear Mr. Barnett,

Thank you for your letter to Dr. Byer regarding the possibility of Dr. Nurul Islam assisting us in our proposed work in Bangladesh.

We still intend to carry out an energy assessment in Bangladesh in the late fall and in this context I would be grateful if Dr. Islam could send us a copy of his CV to enable us to better determine how he could assist us in our planned work there.

Thank you once again for your efforts.

Yours sincerely,

Masood Ahmed  
Acting Chief  
Energy Assessments Unit  
Energy Department

cc: Dr. J. Bharier (with incoming)  
Dr. T. A. Byer

MAhmed:ams.--



Mr. K. Ahmed, AEA

June 30, 1981

Masood Ahmed, Acting Chief, EGYEA

ROMANIA: Energy Sector Mission

1. Further to our telephone conversation this morning, attached please find my marked up copy of the draft letter on the above subject to be sent to the Romanian Minister of Finance by Mr. Karaosmanoglu.

2. As I mentioned to you, I have no basic problems with this draft, but I suggest that the last two sentences of the first paragraph on page 3 be replaced by the following text which would emphasize the integrative nature of the proposed exercise.

"During the course of our project work we have already obtained, or expect to obtain, information on the power and petroleum subsectors and in the area of industrial energy conservation. Therefore the proposed mission would focus at the subsector level on coal and petroleum refining. More importantly, however, the energy assessment exercise would serve to integrate our knowledge of the various energy subsectors and enable us to take a broader look at the developments and prospects for the energy sector as a whole. For this we would need to assemble information on present and projected energy supply/demand balances and on the procedures and criteria used in allocating energy and energy sector investments. We would also hope to examine the important interlinkages between the energy sector and the overall macroeconomic framework with a view to answering such questions as what lies behind the very high ratio of energy consumption per unit of GNP in Romania as compared with many other developing countries."

cc: Messrs. E. McCarthy, EGY  
D. Hughart, EGY

Attachment.-

MAhmed:ams.-



Mr. G. B. Baldwin, AEPDR

June 29, 1981

Masood Ahmed, Acting Chief, EGYEA

FY82 Energy Sector Work - Forms 700

1. Further to Mr. Ruddy's memorandum of June 17, attached please find Forms 700 for Papua New Guinea and Indonesia, the two countries in your region where we plan to do energy sector work in FY82. The work in Indonesia will be a carryover from this fiscal year.
2. Regarding PNG, Julian Bharier is out there to discuss the scope and timing of the proposed assessment mission and this will be firmed up on his return at the end of July. In the meantime, we are tentatively scheduling this mission for November/December 1981.

Attachments.-

MAhmed:ams.-

Ms. Sheila Wilkerson, PMD

June 25, 1981

Masood Ahmed, Acting Chief, EGYEA

Ms. Julia Tuzun

We will be requiring the services of Ms. Tuzun for editing parts of the reports on Indonesia, Mauritius, Nigeria and Haiti during the month of July. Could you please extend her appointment thru July 31, 1981 under the same conditions as in her letter of appointment of May 13, 1981? This is to be charged to 307/50.

ROwen:ams.-



Telex  
053 4275

5-19-81  
74545

MR. W. MATHEWS

381 CHURCHILL AVENUE N. OTTAWA, CANADA

AAA PLEASE CONFIRM YOUR AVAILABILITY FOR PARTICIPATION IN ENERGY  
SECTOR ASSESSMENT MISSION FOR SRI LANKA FROM MAY 30 THRU JUNE 13  
IN COLOMBO FOLLOWED BY ABOUT 10 DAYS REPORT WRITING IN OTTAWA.  
YOU WILL BE RESPONSIBLE FOR ANALYZING PRESENT AND PROJECTED  
PETROLEUM DEMAND AND SUPPLY; THE OPERATION OF THE REFINERY; AND  
THE INSTITUTIONAL AND POLICY FRAMEWORK FOR THE PETROLEUM SECTOR.  
BBB DETAILED TERMS OF REFERENCE AND A PACKAGE OF BACKGROUND  
INFORMATION WILL BE SENT TO YOU LATER THIS WEEK BY AIR EXPRESS.  
CCC TRAVEL AUTHORISATION BEING SENT TO DEBBIE, UNIVERSAL TRAVEL  
AND TRAVEL ADVANCE THRU AMEXCO IN OTTAWA. YOU ARE ENTITLED TO TWO  
STOPOVERS EACH WAY. RESERVATIONS AT OBEROI HOTEL BEING MADE BY US.  
MS. WILKERSON OF PERSONNEL DEPARTMENT WILL BE IN TOUCH RE  
ADMINISTRATIVE MATTERS. REGARDS, AHMED, ENERGY DEPT., INTBAFRAD

SRI LANKA: EGY Assessment Mission RPOwen/MAhmed:ams.-

cc&cleared with: Mr. Bharier

James J. Fish

cc: Ms. Wilkerson, PMD  
Ms. Owen. EGY

Power Adviser, EGY



Distribution List

May 15, 1981

T. A. Byer, EGYEA

SRI LANKA: Energy Assessment Mission. Pre-mission Issues Paper

Mr. Rovani would like to hold a meeting on Monday, May 18 at  
2:30 p.m. in ~~Room D-556~~ to review the above paper. Please attend.

*4th floor*

Distribution List:

Messrs. Rovani, Sadove, Bourcier, Dosik, Fish, Davis, McCarthy, Pryke,  
Fallen-Bailey, Munasinghe, Gillette, Berney, Moore, Bharier,  
Malik, EGY  
Ms. Julius, EGY

Energy Assessment Division Staff

MAhmed:ams.-



WORLD BANK / INTERNATIONAL FINANCE CORPORATION

18 May 1981

Jim:

Just a note to follow up on our conversation last Friday to remind you about having my designation changed back to just "economist" from "energy economist".

Thanks again for speeding up my promotion!

Regards,


  
Masood

*Chron*

## OFFICE MEMORANDUM

TO: Files

DATE: 14 May 1981

FROM: Masood Ahmed, EGYEA SUBJECT: MALAWI: Meeting on Proposed Energy Assessment Mission with the Government Delegation (negotiating the SAL), and AID representatives

1. At the request of Country Programs I met with Messrs. G. Kalinga (Deputy Secretary, Finance), Y. Bobe (Chief Economist) and other members of the Malawian SAL delegation to discuss the status and preparation for the energy assessment mission which is currently planned for August 1981. Also present at the meeting were Mr. T. Graham and Ms. P. Koshel of USAID, which is collaborating with the Bank in carrying out the energy assessment. Other Bank staff at the meeting were Messrs. Peter Hall (Loan Officer), Gavin Wyatt (Consultant, Power Engineer) and Andres Liebenenthal (Energy Specialist, EGYEA).
2. The purpose of the meeting was to take stock of the preparatory work that had been done for the energy assessment mission since my reconnaissance mission to Malawi last November, to confirm the scope and timing of the proposed mission and to clarify further the respective roles to be played by the Bank and USAID in carrying out the proposed assessment. Mr. Bobe informed the meeting that the Government attached a great deal of importance to the energy assessment and to prepare for the mission it had set up an energy inventory team of three economists and an engineer in the Office of the President/Cabinet to collect the necessary data and to carry out some preliminary analysis. Mr. Graham, who had just returned from Malawi, then outlined the work that the energy group had already done and the (ambitious) work program for the remaining period.
3. I told the meeting that the Bank too attached a great importance to the proposed work on energy and hoped that it would be a useful step in assisting the Government to develop a national energy strategy and an effective energy planning capability. We welcomed the opportunity of collaborating with USAID in carrying out this exercise and hoped that its results would be useful for providing a framework for technical and financial assistance from not only the two agencies concerned but also other multilateral and bilateral donors active in Malawi. I then outlined our preliminary views on the issues which would need to be addressed during the August mission as set out in the short note that was circulated to concerned staff on May 11. We also discussed the possible composition of the August mission and I took the opportunity to introduce Mr. G. Wyatt (Consultant) who would participate in the mission and look at power sector issues. It was agreed that the mission would probably also need expertise on energy conservation, energy pricing and institutions, petroleum supply arrangements and coal.

.../



14 May 1981

However, I emphasized that the final composition of the mission and its terms of reference still needed to be firmed up in the light of the Government's comments on the discussion paper circulated and in the course of pre-mission review in the Bank.

4. Finally, Ms. Koshel of USAID pointed out that her office hoped that the energy assessment would identify priority areas where technical assistance was required. She also confirmed that USAID's participation in the assessment itself would be limited to providing the services of Mr. Graham to work with the mission.

5. The meeting adjourned with the Government and USAID confirming that the second half of August was a convenient time for the mission and we agreed to work towards that date. Mr. Bobe also promised to give me his comments on the note we circulated, before he left Washington on Friday, May 15.

6. The meeting served to confirm the view that the Government is taking the proposed energy assessment exercise very seriously indeed and is willing to allocate considerable manpower to ensure its success. We in turn must soon begin fairly intensive preparations for the mission if the August timetable is to be met.

MAhmed:ams.-

cc: Messrs. Ware/Sneddon, Wyatt, Tuncay (EAP); McCleary, Hall, Ms. Hashimoto, (EAL); Sheehan, Fish, Dosik, Elejalde, Bharier, Liebenthal (EGY)

*Mr. Bharier*

## OFFICE MEMORANDUM

TO: Mr. Richard Sheehan, Sr. Adviser, EGY

DATE: May 13, 1981

FROM: Trevor Byer, Acting Chief, EGYEA

SUBJECT: SRI LANKA: Energy Assessment Mission -  
Draft Pre-Mission Issues Paper

1. Attached please find a copy of the above paper for your review. The mission, which will be led by Masood Ahmed, currently plans to start work in Colombo on June 1, 1981. In view of the short time available prior to the mission's departure we are circulating this draft to concerned staff within the Department for comments by c.o.b. Friday, May 15. In the light of these comments, should you think it appropriate, a meeting would be arranged for the morning of Monday, May 18, to review this paper prior to its circulation outside the Department.

2. In particular, the mission would like guidance on the following points raised in the paper:

- (a) Whether the sector issues identified in para. 7 and their subsequent discussion provides an appropriate framework for the work of the mission;
- (b) Whether the staffing proposed for the mission (para.18) is adequate to tackle this work program and in particular whether the proposed coverage of the power sector (para.19) is satisfactory;
- (c) Whether the timetable proposed for the processing of the energy assessment report in para.20 is acceptable.

cc w/attachments for comment by c.o.b. Friday, May 15th

Messrs. Rovani, Sadove, Bourcier, Dosik, Fish, Davis, McCarthy, Pryke,  
Fallen-Bailey, Munasinghe, Gillette, Berney, Moore, Bharier (o/r),  
Malik (o/r), EGY

Ms. Julius, EGY  
Energy Assessment Division Staff

MAhmed:ks



SRI LANKA  
ENERGY ASSESSMENT MISSION  
PRE-MISSION ISSUES PAPER

Overview

1. Sri Lanka is about to face a potentially crippling energy crisis. The cost of oil imports--already a serious strain on the balance of payments--is projected to treble by 1985 and to absorb over half of the country's export earnings in that year. At the same time major electricity shortages which are already disrupting economic activity are likely to recur until 1984 despite extensive use of costly diesel oil fired thermal generating capacity. Beyond that date the commissioning of the Mahaweli hydro schemes will provide a much needed measure of relief but contrary to previous expectations it now appears likely that these schemes will have to be supplemented by substantial additional generating capacity in the second half of this decade. Furthermore, these developments are projected to take place in a period when the overall macro-economic framework is under severe pressure as the Government attempts to mobilize additional resources and scale back public investment to levels consistent with greater macro-economic stability.

2. This combination of factors suggests that developments in the energy sector will be critically important over the medium term. Inadequate supplies for both electricity and petroleum could effectively limit economic growth unless steps are taken to improve the efficiency of energy use and to moderate the high rate of growth of energy demand. This in turn is unlikely to be achieved without considerable strengthening of the currently weak and fragmented institutional and policy framework for energy sector management.

Mission Objectives and Background

3. The objectives of the proposed energy assessment mission, which is an integral part of the ongoing economic and sector work program in Sri Lanka, are as follows:

- (a) to assist the Government in evaluating the seriousness of the projected medium-term energy supply shortage and in developing a strategy to minimize the economic costs of this shortage;
- (b) to analyze the longer-term energy options that are open to the Government and to establish preliminary priorities across them for pre-investment and development work;
- (c) to analyze the current institutional and policy framework for energy sector planning and to assist Government in identifying means for strengthening this framework; and,
- (d) to provide a framework for the existing and planned technical and financial energy assistance activities being undertaken by bilateral and multilateral donors, to identify gaps in basic information and the areas for further analytic work.

4. Considerable background material on Sri Lanka's energy sector is already available in the Bank. A desk study of the sector was undertaken in September 1980 and the 1981 Country Economic Report, which has just been discussed with the Government, includes a chapter which focusses on the major energy sector issues. The Government requested the Bank to carry out a full energy sector assessment in March and in the Bank review of country selection criteria for energy sector work, carried out in the same month, Sri Lanka was included as a country where an energy sector assessment was to be carried out on an urgent basis. A reconnaissance mission visited Colombo in late April and discussed the scope, focus and timing of the proposed assessment with concerned Government agencies. 1/ Other donor agencies are also active in the energy sector. The ADB have recently completed a study of the sector as part of their regional energy profile and USAID have some ongoing work on renewable energy. There is also a UNEP demonstration project on rural/renewable energy but it is not believed to be successful.

1/ This issues paper is being circulated instead of a Back-to-Office report for that mission whose TOR's are attached for reference.



### Energy Sector Background

5. Overall energy consumption patterns in Sri Lanka are typical of a low income, moderately industrialized developing country. Non-commercial energy sources (primarily fuelwood) account for about 60% of total energy supply with commercial energy supply being provided from imported petroleum (70%) and indigenous hydro electric power (30%). Sri Lanka has no known coal deposits. Despite fairly intensive exploration work off the northwest shore of the island, the only significant prospective area, no deposits of oil have been found. The country has significant hydro potential of which about half would be harnessed upon completion of the Accelerated Mahaweli Program in this decade.

6. After a period of relative stagnation, commercial energy demand has been rising fairly rapidly since 1977--about 8% p.a. The transport and domestic sectors in particular have exhibited strong consumption growth and together they account for over half of total energy consumption today - a proportion which is somewhat higher than is typical for other low income developing countries. The sectoral distribution pattern for commercial energy is presented below.

#### COMMERCIAL ENERGY CONSUMPTION - 1979

	<u>Electricity</u>		<u>Petroleum Products</u>		<u>Total</u>	
	<u>TOE</u>	<u>Percent</u>	<u>TOE</u>	<u>Percent</u>	<u>TOE</u>	<u>Percent</u>
Household	89.3	23.1	205.4	23.3	296.7	23.3
Commercial	73.7	19.1	1.2	0.1	74.9	5.9
Agriculture	-	-	16.9	1.9	16.9	1.3
Industry	212.6	55.1	236.5	26.9	449.1	35.5
Transport	-	-	420.2	47.8	420.2	33.2
Other	10.3	2.7	-	-	10.3	0.8
Total	<u>389.9</u>	<u>100.0</u>	<u>980.9</u>	<u>100.0</u>	<u>1266.1</u>	<u>100.0</u>

Sources: Ceylon Electricity Board, Ceylon Petroleum Corporation, and mission estimates.

### Major Issues in the Energy Sector

7. There are eight major issues in the energy sector that will need to be addressed in the context of this mission. These are:

- (i) The Medium Term Electricity Supply/Demand Balance
- (ii) Electric Power Generation Program 1985 - 1995
- (iii) Petroleum Refining and Trade Strategy
- (iv) Energy Conservation, Demand Management and Interfuel Substitution
- (v) Fuelwood Supply, Rural Electrification and the Rural Energy Supply/Demand Balance
- (vi) Non-conventional Energy Development Programs
- (vii) Energy Sector Planning and Institutional Framework
- (viii) Energy and the Macro Economic Framework.

Many of these issues are obviously interrelated but for convenience they are dealt with in turn below.

### The Medium Term Electricity Supply/Demand Balance

8. On the basis of the Central Electricity Board's most recent forecasts of electric power demand, substantial electricity shortages will persist through 1984 despite the fact that 120 MW of gas turbines will become fully operational by the end of this year. The mission will attempt to assess how serious these shortages are likely to be and to assist the Government in evolving a strategy for minimizing their disruptive impact. A critical element in this assessment will be a detailed review of the CEB's underlying load forecasts which project continued strong growth



in electricity sales ( 16% p.a.). Even if these projections should appear reasonable, the absence of any realistic short term supply side option implies that measures need to be undertaken to ration this limited supply of electricity in a more satisfactory way than the across-the-board power cuts which have been resorted to in 1980/81. More effective use of tariff policy is obviously one measure available to the Government but it may not be willing to exercise this to the required extent because of political considerations. Other options which need to be explored are a selective (temporary?) tax on the sales of energy intensive household appliances and the possibility of deferring the commissioning of one or more of the large energy intensive industrial projects which are due to come on stream in 1983/84. The mission will seek to quantify the likely costs and benefits associated with such a policy and to develop a series of alternatives for the Government to choose from.

Electric Power Generation Program 1985 - 95

9. Until recently it was believed that with the commissioning of the three major Mahaweli schemes (Victoria 210 MW, Kotmale 200 MW, and Randenigala 122 MW) no additional generating capacity would be required during this decade. However, the CEB's most recent projections indicate the need for an additional 300 MW of thermal and 320 MW of hydro capacity to come on stream between 1985-1990. To meet this need the CEB has developed a proposed power generation investment program entailing investments of \$1.7 billion between 1985 -90. However, this is unlikely to even approximate a least cost generation program because it has been developed with the "artificial" constraint that investments have to be made after 1985. Consequently, there is a heavy reliance on oil -fired thermal capacity in the program and many of the cheaper hydro projects have been deferred to a later date. While the short term resource shortage facing the Government is a very real and important

consideration, the costs of its strict application to the power supply sector need to be assessed and quantified if a more rational power supply strategy is to evolve.

#### Petroleum Refining and Trade Strategy

10. Sri Lanka's refinery subsector is going through a period of considerable change. The country has traditionally followed a policy of maximizing domestic refinery throughput and re-exporting about 40 percent of the refinery's production largely in the form of surplus naptha and furnace oil. At the same time, domestic output of middle distillates has to be supplemented by significant diesel and kerosene imports. While this policy has proved generally profitable in the past, it may need to be modified in the future as naptha exports decline with the commissioning of the urea factory and the surplus of furnace oil increases through interfuel substitution programs (see para. ). The mission will investigate the impact of these developments on the operations of the refinery sector and assess the potential for the installation of secondary refining capacity to reduce the extent of product imbalance.

#### Energy Conservation, Demand Management and Interfuel Substitution

11. Underlying Sri Lanka's present energy difficulties is the fact that the demand for both electricity and petroleum products has grown rapidly since 1977 and is projected to continue to do so. In part this is the inevitable result of a sharp acceleration in the pace of economic activity and a more liberalized import policy but it also reflects the almost complete absence of any organized efforts at promoting energy conservation or improving the efficiency of energy use other than the reliance on a recently significantly improved but still unsatisfactory pricing



policy for energy products. The need for<sup>a</sup>/more active program of demand management measures to complement energy pricing is reinforced by the fact that most of the large energy users are public sector corporations which may be only marginally responsive to price changes. <sup>1/</sup> The mission would tackle the question of energy conservation at two levels. First, it would undertake a preliminary identification of the magnitude of savings that could be achieved in three or four of the major energy using organizations and develop a program for better defining and realizing these savings. Secondly, it would assist the Government in drawing up the terms of reference for a national energy conservation program and in defining the institutional and policy framework for the implementation of this program.

12. In the area of <sup>inter</sup> / fuel substitution, the mission would review existing plans to convert the cement industry from furnace oil to coal and assess the potential for a larger program of coal based substitution in the industrial and power generation sectors. The mission would review the plans to convert a substantial proportion of the fuel requirements of the tea estates from furnace oil to fuelwood.

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1/ The public sector accounts for 40 percent of total electricity sales and 18 of the 20 largest individual consumers are public sector corporations. The same is true for petroleum products where the largest users are again in the public sector - the cement corporation (40% of fuel oil sales) the Transport Board (33% of auto diesel sales) the CEB and the steel corporation.

Fuelwood Supply, Rural Electrification and the Rural Energy Supply/Demand Balance

13. While a rising oil import bill and recurring electricity shortages are the visible manifestations of the commercial energy problem in Sri Lanka, they detract from the fact that sixty percent of the country's total energy supply is from fuelwood and other noncommercial sources. In 1970 it was estimated 98% of rural and 75% of urban households used firewood for cooking and this proportion is unlikely to have declined much because the consumption of kerosene, the most likely substitute, has also declined over the 1970s. The main issue here is the continuing decrease in forest cover and the effectiveness of the Government's reforestation program, which has been cut for this year by 25% as part of the Government's overall investment cutback.

14. Another issue which needs to be addressed in the context of the rural energy situation is the merits of the Government's rural electrification program. The pace of this program over the near future is particularly affected by the likely shortages of electricity and the tight squeeze on resources available for energy sector investment.

Non-Conventional Energy Development Program

15. Various nonconventional energy sources - ocean thermal, solar, wind and nuclear energy - are being studied by different agencies in Sri Lanka and their potential for solving all energy problems instantly has been the subject of considerable public and political debate. The Government has indicated that it would welcome the Bank's objective assessment of the likely contribution of these sources<sup>in</sup> resolving the country's energy problems during the 1980s as well as some guidelines for choosing priority areas for research and preinvestment work across the various technological options. The mission will address these issues.



### Energy Sector Planning and Institutional Framework

16. The institutional framework in the energy sector has traditionally been weak and fragmented and little effective energy planning has been done. Delays in decision making and inadequate follow up in implementing those decisions are a major cause of the current energy problem. However, an important development on this front has been the recent takeover of the Ministry of Energy portfolio by the President himself and a growing awareness in all parts of the Government that an adequate and affordable supply of energy is going to be the most important short-to-medium term development constraint . There is now a great deal of talk of strengthening the role of the Ministry of Energy and of extending its authority to actually cover all major energy sector institutions which is currently not the case.<sup>1/</sup> However, the Government needs assistance in evaluating the various proposals being made to rationalize the institutional and policy making structure for energy and would welcome any assistance that the Bank could provide in this regard.

### Energy and the Macro Framework

17. Sri Lanka is probably the classic example of a country where developments in the energy sector will have a crucial impact on the Government's overall development strategy. The shortage of electricity in the short term and the inadequacy of public resources to implement a \$4 billion power investment program in the second half of the 1980s, suggests that a whole reappraisal of the Government's industrial

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<sup>1/</sup> The Petroleum Corporation reports to the Ministry of Industries; fuelwood/supply is the responsibility of the Ministry of Lands and Land Development and the Mahameli Project is of course, a separate ministry in its own right.

development strategy may be warranted. This is clearly beyond the scope of the proposed mission, but certain preliminary analysis can be undertaken. In particular, the mission will attempt to quantify the likely costs and benefits associated with deferring beyond 1984 the commissioning of a few of the major energy intensive new projects which are due to come on stream in 1982/83 and which account for a quarter of the increase in electricity demand between 1981 and 84. For the longer term, it is important that the appraisal of all major energy using projects be based on the economic cost of energy (particularly electricity) supply and this makes it even more urgent for the ongoing work on the calculation of LRMC's for the power sector to be completed. The mission will follow up on this issue.

Timing and Composition of Mission

18. The mission plans to start work in Colombo on June 1st and to stay for about three weeks. This would allow us to overlap with the Power project appraisal mission which is scheduled to be in the field from May 25 to June 5. The mission's composition would be as follows:

Mr. Masood Ahmed (EGY) - Leader

Mr. John Borthwick (ASA) - To focus on the links between energy and the macro framework, the projected impact on the balance of payments and on the public investment program; he would also make a major contribution to the preparation of the report.

Mr. Anwar Malik (EGY - Renewables)- Responsible for noncommercial and renewable energy issues and on the rural energy supply/demand balance.



Mr. D. Leslie (Consultant)\*- Responsible for the analysis of energy conservation and interfuel substitution issues.

Mr. W. Mathews (Consultant) - To focus on petroleum demand, supply and pricing and on the operation of the refinery subsector.

19. The mission will liaise closely and overlap with the Power VII project appraisal mission comprising Messrs. B. Davis and J. Ryan (ASP) which will be in the field from May 24 to June 5. Consequently, no specific expertise for the power sector has been programmed for the assessment mission with the understanding that Messrs. Davis and Ryan would address these issues and provide a section on the power sector for inclusion in the energy assessment report. This arrangement should be confirmed during the discussion of the pre-mission issues paper with Regional Management. We also need to confirm during these discussions that provisions have been made to allow Mr. Borthwick, the country economist, to devote approximately 5 - 6 weeks of his time to the preparation of the energy assessment report in July/August.

Timetable for Report Preparation

20. Following the mission's return to Washington in the last week of June, the timetable for further processing is as follows:

Back to Office Report and Issues Paper	July 20
White Cover Assessment Report	Sept. 15
Working level Review Meeting	Sept. 25
Yellow Cover Assessment Report	October 10
Yellow Cover Review Meeting	October 20
Green Cover sent to Government	November 10
Discussions with Government	December 1981

\* To be confirmed

Masood Ahmed, EGYEA

April 21, 1981

Julian Bharier, EGYEA

**SRI LANKA: Energy Assessment Reconnaissance Mission -  
Terms of Reference**

1. On April 21 you will proceed to Colombo to join the mission led by Mr. Sarwar Lateef. During your stay you will participate in the mission's discussions of the draft economic report's section on energy. You will also hold preliminary discussions on the scope and timing of the proposed energy assessment mission currently scheduled for the end of May.

2. With regard to the latter, you should:

- (i) Confirm with the Government the suitability of the proposed timing for the energy assessment mission.
- (ii) Identify those areas in the energy sector which are of particular concern to the Government so that, to the extent possible, the proposed assessment mission could be staffed accordingly.
- (iii) Brief the UNDP resident representative and the representatives of other concerned donor agencies as appropriate - on the nature, scope and timing of the proposed energy mission so as to explore the possibilities for cooperation.

3. Upon your return on May 6, you will prepare a pre-mission issues paper for the main assessment mission.

cc and cleared with: Mr. M. Tadros, ASA

cc: Messrs. V. Rajagopalan (PAS); Holsen, Slade, (ASNVP); Geli, Lamson-Scribner, (ASP); Shibusawa, Ahmed, Lateef, Pilvin, Borthwick, (ASA); Rovani, Bourcier, Sheehan, Sadove, Fish, McCarthy, Guillette (EGY)

MAhmed:ams.-



Travel Office

May 13, 1981

Masood Ahmed, EGYEA

SRI LANKA: Hotel reservations for forthcoming energy  
assessment mission

1. In connection with the above mission, I would be grateful if you could make reservations at the Oberoi Hotel in Colombo as follows:

	<u>In</u>	<u>Out</u>
Mr. M. Ahmed (EGYEA, x74545)	May 30	June 19
Mr. A. Malik (EGY, x72830)	May 30	June 19
Mr. W. Mathews (CONS, EGY)	June 1	June 12
Mr. D. Leslie (CONS, EGY)	May 31	June 19

All room single with bath.

2. I will be contacting you shortly with reference to travel arrangements for the above.

3. Travel requests will follow as soon as the reservations are confirmed.


cc: Ms. R. Owan, EGY  
Mr. A. Malik, EGY

MAhmed:ams.--

## OFFICE MEMORANDUM

TO: Mr. Peter Hall, EAD

DATE: May 11, 1981

FROM: Masood Ahmed, EGYEA SUBJECT: MALAWI: Meeting on Energy with the Malawian SAL Delegation.

1. In connection with the above meeting, we have prepared at your request a brief note setting out the major issues in the energy sector which will need to be addressed during the proposed energy assessment mission in August. I would like to emphasize the preliminary nature of the discussion in this note. Both the selection of issues and the focus of the proposed assessment mission will need to be refined further during the preparations and discussion of the pre-mission issues paper in July. Nevertheless, this note provides a useful basis for discussing the broad scope of work and likely staffing of the assessment mission with the concerned members of the Malawian delegation.

2. Subject to Gavin Wyatt's availability, which I will check when he comes into the Bank tomorrow, the meeting could take place on Wednesday afternoon at 3:00 p.m. in Room A-1130 as you proposed. I think it is important for Mr. Wyatt to join in this meeting so that he could meet with the key counterpart officials that would be involved with the work of his mission in August.

cc and cleared with: Mr. R. Sheehan, EGY

cc: Messrs. Ware/Sneddon, Wyatt, Tuncay (EAP); McCleary, (EAL)  
Fish, Dosik, Elejalde, Bharier, (EGY); Ms. Hashimoto (EAL)

MAhmed:ams.-



## MALAWI

### ENERGY ASSESSMENT MISSION

#### PRELIMINARY OVERVIEW OF SECTOR ISSUES

##### Country Background

1. Malawi is a poor, landlocked country with a population of 5.6 million which is almost entirely rural and rapidly growing. Agriculture dominates the economy, accounting for 43% of GDP, 85% of the labour force and almost all of the country's exports. Malawi's main natural resources are a good supply of water, moderately fertile land and a climate which is favourable for crop production. Unlike its neighbours, Malawi does not have substantial known mineral resources.
2. Since independence in 1965, the country has made significant progress both in terms of growth--between 1968 and 1978 GDP grew at an average annual rate of 6%--and in meeting the educational, health and other basic needs of the population. Over the past two years, however, this situation has altered dramatically as export prices have fallen--particularly for tobacco which provides over half of export earnings--and the prices of essential imports, including petroleum, have continued to rise. For 1980, the trade deficit is estimated at \$80 million.

##### The Energy Sector

3. Malawi's primary energy needs are met from four major fuels: imported petroleum (13%) and coal (2%) and indigenous wood (79%) and hydroelectric power (6%). 1/ While the consumption of petroleum products is small in absolute terms (about 3,000 bdoe), reducing the country's dependence on this source of energy is one of the Government's major objectives. There are two main reasons for this. First, because of its landlocked position the cost of these imports to Malawi is much higher than the international price of these products. In 1980, oil import costs are expected to be \$60 million net of transport from the

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1/ These figures allow for, and are based on, the following different end-use efficiencies for the four fuels: petroleum products - 30%, coal - 30%, electricity - 80%, fuelwood - 10%. While these efficiencies are average approximations and subject to a margin of error, they provide a better perspective on the energy supply mix because of the substantially lower average efficiency of firewood use and the high proportion of total energy supplied from this source.



coast but \$80 million inclusive of this transport. Second, in addition to higher costs, complete reliance on the already strained railway system of Mozambique increases the likelihood of supply interruptions. In 1979, Malawi was obliged to import by air much of its essential fuel requirements because of problems with the Mozambique railway. Malawi's geographic situation thus has an important bearing on the relative premium the country can afford to pay for the development of indigenous energy sources to substitute for imported petroleum.

4. The Government's other major objective is to contain or reduce the use of firewood the single most important energy source. This is because the country faces a potentially crippling energy crisis that will result from progressive deforestation if present trends continue unchecked. About 5 million cubic metres of wood are used annually to meet household energy needs and roughly the same amount again is used as industrial fuel, primarily for tobacco processing. Much of this wood is taken from forests on customary land at a rate well above their sustainable yield. While this practice has not yet resulted in a national fuelwood shortage, the problem is potentially critical and regional supply shortages have already become apparent. As a response, the Government is developing an afforestation program and, with Bank assistance, a unit has been set up in the Ministry of Agriculture and Natural Resources to investigate the possibilities for reducing wood consumption through the improvement of equipment efficiency and the development of other renewable energy resources. However, these efforts are still at the planning stage.

5. Under these circumstances there are only a limited number of options that the Government can pursue. Increasing the supply of hydroelectric power, the other main indigenous energy source, is one of them. The current installed hydro capacity (65MW) is only a fraction of the total power potential of the Shire River in the country's Southern Region. In the Northern and Central Regions several other rivers are also known to possess substantial but as yet unassessed hydroelectric potential. Greater use of hydroelectricity is therefore both technically feasible and, at least for urban/industrial power needs, probably part of the least cost energy development program. Some hydro development may even be justified on the basis of fuel savings, from foregone thermal generation. However, using hydropower to substitute for firewood consumption on any major scale would require considerable investment in a rural electrification program which does not appear justified at this stage.



6. One measure which will have a direct impact on the consumption of petroleum is the proposed ethanol plant which is expected to be operational in 1981. This plant has been financed with IFC assistance and when fully operational it will meet 8-10% of the country's gasoline requirements. Other supply side options which need to be considered but whose impact cannot be evaluated now because of inadequate data, include increasing the use of coal to substitute for firewood, particularly in the tobacco curing industry. Related to this is the feasibility of exploiting and developing indigenous coal reserves in the north which have previously been regarded as uneconomic but may no longer be so. Improving the efficiency of firewood use through conversion into charcoal, is another option whose feasibility needs to be examined.

7. Little information is available on the extent to which existing demand management measures have enhanced the efficiency of energy use. Petroleum product prices are generally higher than import parity but their relationships and the impact on interfuel substitution trends is not clearly understood. Nor is the impact and efficiency of the electricity tariff structure adequately documented. Much of this uncertainty is caused by the lack of a coherent, overall energy policy and the absence of a coordinating agency for the energy sector. Government officials recognize that the absence of such an integrated policy is the most important impediment to the rationalization of energy use and the coordinated development of alternative fuels and they have expressly asked for assistance in this regard. Some headway has already been made in the field of renewable energy where an energy planning unit has been set up to examine the possibilities of substituting for wood with other renewable energy sources. However, as noted earlier, these efforts have not yet had a major impact and there is a need in any event to better integrate the renewable energy sector with the other major fuels.

8. Finally, no organized energy conservation program is known to exist and the potential for energy conservation in the major energy consuming sectors--industry and transport--needs further examination. One apparent anomaly in this regard is why the largest industrial consumer of electricity in Malawi happens to be a sugar estate when in many other countries, sugar estates are net suppliers of electric power to the national grid.

Objectives of Energy Assessment Mission

9. The above discussion indicates that developments in the energy sector will have a profound effect on the country's growth prospects during this decade. A review of the options in the energy sector is therefore required to highlight the type of constraints the country faces in the 1980s due to developments in this sector.

10. The objectives of the energy assessment mission, which is an integral part of the energy sector work programme in Malawi, are:

- (i) To identify the major energy issues and options facing Malawi during the 1980s;
- (ii) To assess the existing and prospective energy supply and demand situation in the country and highlight how this sector affects the overall economy now and in the 1980s; to assess the investment requirements for the energy sector and identify priorities among these investments in the macroeconomic context.
- (iii) To provide a framework for the existing and planned technical and financial energy assistance activities being undertaken by bilateral and multilateral donors, to identify gaps in basic information and the need for further analytic work.

11. A detailed scope of work for the mission and terms of reference for the mission members will be drawn up in July for discussion with the Government and within the Bank.

5/11/81

EGY



Mr. Michael Gorham, OPD

May 8, 1981

Masood Ahmed, EGY

Overtime authorization

Overtime is hereby authorized over this weekend to make corrections to the report "MAURITIUS: Issues and Options in the Energy Sector".

Funds should be drawn from the Energy Department (307), Energy Assessments Division (50).

Please have report ready by Monday, May 11 in the morning.

ams.-



Masood Ahmed, EGYEA

April 21, 1981

Julian Bharier, EGYEA

SRI LANKA: Energy Assessment Reconnaissance Mission -  
Terms of Reference

1. On April 21 you will proceed to Colombo to join the mission led by Mr. Sarwar Lateef. During your stay you will participate in the mission's discussions of the draft economic report's section on energy. You will also hold preliminary discussions on the scope and timing of the proposed energy assessment mission currently scheduled for the end of May.

2. With regard to the latter, you should:

- (i) Confirm with the Government the suitability of the proposed timing for the energy assessment mission.
- (ii) Identify those areas in the energy sector which are of particular concern to the Government so that, to the extent possible, the proposed assessment mission could be staffed accordingly.
- (iii) Brief the UNDP resident representative and the representatives of other concerned donor agencies as appropriate - on the nature, scope and timing of the proposed energy mission so as to explore the possibilities for cooperation.

3. Upon your return on May 6, you will prepare a pre-mission issues paper for the main assessment mission.

cc and cleared with: Mr. M. Tadros, ASA

cc: Messrs. V. Rajagopalan (PAS); Holsen, Slade, (ASNVP); Geli, Lamson-Scribner, (ASP); Shibusawa, Ahmed, Lateef, Pilvin, Borthwick, (ASA); Rovani, Bourcier, Sheehan, Sadove, Fish, McCarthy, Guillette (EGY)

MAhmed:ams.-



Mr. Harinder S. Kohli, IPD

April 21, 1981

Julian Bharier, EGYEA

MAURITIUS: Feasibility Study for Ethanol

1. Attached please find a copy of the above feasibility report which has been prepared for the Government of Mauritius by the consulting firm of Lonrho Ltd. The Government is currently reviewing the analysis and recommendations made in this report and, in the context of ongoing work on the energy sector assessment, has asked the Bank to help in this review by commenting on the validity of the assumptions and methodology used in the study.

2. The Government has indicated that it would like our comments soon and as the report is over 600 pages long and only one copy has been made available to the Bank, it is not expected that the Bank's comments would be either very detailed or necessarily definitive. Rather, what is required is a general review of methodology and the identification of those underlying assumptions which are most likely to be subject to change.

3. Along these lines, I would be grateful if I could have your comments on this study by Wednesday, April 29, so that I can then pass on the attached copy to other concerned staff. Thank you for your cooperation.

cc: w/o attachment - Messrs. Schott, Blay, (EAD); Ware, Tuncay, (EAP);  
Capoluongo, (IPD); Sheehan, Collins, (EGY)

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Outline of Speech by

Mr. Y. Rovani, Director Energy Department, World Bank

1. The Energy Problem in the LDC's:

- developing countries currently consume only 12% of world's commercial energy but their requirements are increasing rapidly. By 1990 LDC energy consumption projected to grow to 30 million bdoe and oil consumption to 15 million bdoe.
- this poses serious difficulties for 90 or so oil importing developing countries (OIDC's) whose oil import bill is expected to more than double to \$110 billion (1980 \$) during this decade.
- an equally serious energy problem faced by many OIDC's (including some of the poorest) is the dwindling supply of fuelwood on which they rely for 25% of their energy.

2. The Adjustment Process

- Maintaining LDC growth at acceptable levels and ensuring that their energy demands can be met will require a substantial reordering of development strategies.
- Key elements of this adjustment process will include:
  - i) integration of energy development and use strategy into the country's overall planning framework
  - ii) vigorous program of import substitution and a massive savings and investment effort to develop indigenous energy sources
  - iii) major conservation efforts to increase the efficiency of energy use.
- The investment costs of such a program are high, about \$500 billion (1980 \$) over the decade. But so are the costs of inaction. However, many LDC's need assistance in mobilizing financial, technical and human resources required for this program.

3. Role of the World Bank

- WB is the largest source of public support for development of energy resources in LDC's. In addition to its own lending, the Bank serves as an "honest broker" and catalyst for mobilizing other international financial resources.



- Bank involvement in energy sector has a long history but prior to 1977, main focus was the financing of electric power projects.
- In 1977, Bank's Board of Directors approved a broadening of energy sector lending to finance primary energy development including petroleum. In 1979 this program for hydrocarbons was further expanded to include 'predevelopment activities' including exploratory drilling.
- Last year Bank prepared a comprehensive report on LDC energy situation and in the light of this, decided to give increased attention to energy demand management, rural energy problems and to renewable energy development.
- The Bank has also recently embarked on a major program of country energy assessments in collaboration with the UNDP. These assessments, which are going to be carried out for about 60 countries over the next 4-5 years, provide the Govt, other donor agencies and the Bank with an objective diagnosis of the major issues and options in energy sector and identify a program for their resolution.

#### 4. Bank Lending for Energy

- In FY81 the Bank expects to lend about \$2.8 billion for energy projects.
- For the 5 year period FY81-85, the Bank's current programmed lending for energy is on the order of \$13 billion. However, the Bank has also identified a "desirable" energy lending program of \$25 billion which would help finance projects with a total cost of over \$90 billion. This expanded program would enable the Bank to respond more adequately to the vastly increased financial needs for energy investment in the LDC's and to expand substantially its lending for fuelwood, alcohol production for biomass, refinery improvement and conversion, and industrial retrofitting.
- However, such an increase in the level of Bank lending for energy could not be accommodated within the Bank's current overall resources without seriously distorting the sectoral balance of lending between energy and other equally important sectors such as agriculture.
- The Bank is therefore exploring the possibility of establishing an energy affiliate as a means of providing this additional financing.

5. Sectoral Aspects of 'Desirable' Energy Lending Programs

- Electric Power - will continue to dominate Bank energy lending (45%) as it does LDC public investment programs. Hydroelectricity will receive strong emphasis; load management and loss reduction will become standard features of Bank power projects. Cofinancing and internal resource mobilization will be stressed.
- Oil and Gas - projects will account for a third of Bank energy lending. Roughly a third of this will be for predevelopment activities sometimes including exploration drilling; the rest for development projects in oil and, increasingly, natural gas. Catalytic role for mobilizing private sector resources will be of particular importance in this area.
- Coal program will support near doubling of coal output in LDC's by 1990. Priority will be given to exploration and preinvestment work and to the development of associated transport infrastructure.
- Energy efficiency will receive increased attention in all aspects of Bank work, through the support of appropriate pricing and demand management policies. Direct lending for energy conserving projects, such as retrofitting, will be preceded by diagnostic audits; early emphasis will be on improved maintenance and management of plant operation.

3/27/81



All EGY Staff

April 16, 1981

Yves Rovani, Director, EGY

Briefing Note on the Bank's Involvement in Energy

1. I have pleasure in attaching for your information a short note which summarizes the Bank's involvement in the energy sector and which was prepared as part of a series of briefing papers for Mr. Clausen. I think that this note provides a succinct description of the main energy issues facing LDCs today and of the policies and programs being developed by the Bank as a response to these urgent needs. I hope you will find this document interesting and useful.

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## E N E R G Y

### Energy in the LDCs

1. Developing countries presently consume 12 percent of the world's commercial energy but their requirements are increasing more rapidly than those of the industrialized countries because of their higher economic growth rates and due to the continuing shift away from traditional to commercial energy sources. Even under modest growth assumptions, during this decade LDC commercial energy consumption will nearly double to about 31 million b/d and their consumption of oil will increase by two-thirds to 15 million b/d.

2. This poses particularly serious problems for the 90 or so oil importing developing countries (OIDCs) who are already experiencing acute difficulties in maintaining their economic progress whilst financing the ever increasing costs of fuel imports. If energy production in these countries continues to grow no faster than in recent years, their oil import bill will more than double (in constant 1980 dollars) to \$110 billion by the end of the decade. International borrowings to finance this deficit will further raise the already high level of LDC indebtedness and the proportion of export earnings spent on servicing this debt. Many LDCs must also begin to tackle a second energy problem of equally serious dimensions: the rapidly diminishing supplies of fuelwood which currently provide a quarter of their total energy. Fuelwood shortages are common in many of the poorest OIDs and for them rapid deforestation is as severe a development constraint as oil dependence.

3. Maintaining developing country growth and ensuring that LDC energy demands are met without causing additional strain in world oil markets depends primarily on a combination of increased indigenous energy production and more effective energy demand management. On the supply side, the increase in the real price of oil has made attractive the exploitation of indigenous reserves of oil, gas, coal and hydroelectric power which were previously regarded as uneconomical, or of marginal value. On the demand front, rationalized energy pricing policies supported by effective fiscal and regulatory measures could result in substantial energy conservation and increase the efficiency of energy use. The Bank has estimated that through a concerted program of maximizing their energy production and improving the efficiency of energy use, oil importing developing countries could reduce their 1990 oil import bill by a quarter, or approximately \$25-30 billion (1980 dollars).

4. The investment costs of this expanded energy program for OIDs are on the order of \$500 billion (1980 \$) over the next decade. However, the ability of these countries to mobilize the external financial resources for this program is severely constrained by lack of creditworthiness for commercial finance (in part because of oil import bills), uncertainty about



their domestic energy resource base, and inadequate domestic policies and institutions. Commercial banks and oil companies, aware of these constraints, have further inhibitions of their own: the banks show little initiative in mobilizing the large amounts of finance for the infrastructure required to permit exploitation of indigenous gas, hydro and coal; the oil companies want crude oil for world markets and they seek protection against political risk, including nationalization. The Bank is thus well placed, as the largest source of public support for development of energy resources in LDCs, to act as honest broker and catalyst for mobilization of financial resources in addition to its own lending and to provide, through its presence, added sanctity to contracts between oil companies and LDCs.

#### Bank Involvement in Energy

5. Until 1977, World Bank involvement in the energy sector was largely confined to electric power, where it has long been the major public source of technical and financial assistance for LDCs. In 1977 the Bank's Board of Directors approved a broadening of sector lending to finance primary energy development, including a reversal of the previous policy not to lend for petroleum. In January of 1979 the Board approved an expansion of the new hydrocarbon lending program into "predevelopment" activities including exploratory drilling. The staffing dimension of this rapid extension in the Bank's energy mandate has been a ten-fold increase, from seven energy-related policy, advisory and petroleum staff in 1977, to the current Energy Department establishment of nearly 70 professionals.

6. Following the doubling of oil prices in 1979, the Bank prepared a comprehensive review of the LDC energy situation which was discussed by the Board last August. The Board then approved a further broadening of the Bank's energy strategy (i) to emphasize energy demand management in all sectors; (ii) to give increased attention to rural energy; (iii) to support renewable energy development, and (iv) to expand the role of gas in meeting LDC energy needs. The lending implications of this comprehensive program, however, exceed the Bank's resources within the constraints of its overall sectoral balance objectives; hence, the proposal for seeking additional resources for an expanded World Bank energy lending program which is under consideration.

7. Energy activities in the Bank currently span several departments. The Energy Department is responsible for sector policy and advice (including advisory work in power, conservation, new and renewable energy, energy policy and economics, and oil policy) as well as country energy assessments. It also has operational (lending) responsibilities for petroleum (oil and gas) projects. Coal, refineries, alcohol projects, synthetic fuels and industrial retrofitting are also centrally managed by the Industrial Projects Department. Power lending is handled by the energy divisions of the regional projects departments. Fuelwood projects are undertaken through the Bank's regional agriculture divisions with guidance from the Forestry Adviser in the CPS Agriculture and Rural Development Department.



### Country Lending Programs

8. A balanced supply/demand approach is being programmed in energy lending over the next five years, addressing the priority needs of each member LDC through various subsector projects invariably containing a substantial institution building component. To better evaluate these needs, to provide a framework for our own lending in the different energy subsectors and to assist member Governments in developing an integrated energy policy and an effective national energy planning capability, the Bank has recently embarked on an expanded program of energy sector assessments. These assessments, which are financed partly by the UNDP, provide a diagnosis of the main issues and options facing the country in the development of its energy sector and identify programs of external technical and financial assistance required in support of the country's effort to deal with its energy problems while maintaining momentum in its overall development. The Bank often follows this diagnostic effort with lending for technical assistance in planning and institution building at the national level.

9. On a subsector level, the Bank's lending for oil and gas has grown rapidly from one project in FY77 -- \$150 million for the development of the Bombay High discovery in India -- to 13 projects in FY80 and 16 planned for \$890 million this year. Reflecting the Bank's policy initiative of 1979, nearly 40% of the projects approved since the beginning of FY80 are for exploration promotion activities, sometimes involving drilling. Very strong interest is shown in this by member LDCs and by many oil companies who value the Bank's presence as an objective party and appreciate the need for preparatory work. Eighteen private oil companies are currently working with the Bank on projects which have been approved or are under preparation in 17 member countries. The Bank's efforts in the subsector will result in a dramatic increase in exploration of new areas and should result in substantial increased production, mainly substituting for oil imports. Forty percent of the development projects approved to date have been for natural gas.

10. LDC oil refineries will also be targeted for Bank lending. In many cases, it is economically attractive to improve the low energy efficiency of existing refineries and to change their configuration to better meet the changing patterns of product demand that are being brought about by petroleum substitution programs.

11. Electric power, a traditional sector for the Bank and its second largest, after agriculture, in lending volume, will continue to dominate Bank energy lending as it does LDC public investment programs. Hydro-electricity will receive strong emphasis as will geothermal where the resources look promising, and the Bank will continue to stress cofinancing and internal resource mobilization through sound financial management and rational tariff policies. Load management and loss reduction will become standard features of Bank power projects.



12. Accelerated Bank lending for coal must be preceded by early emphasis on coal exploration and pre-investment work, including substantial amounts of technical assistance to familiarize LDC governments with the technical, economic and managerial aspects of coal mining, handling, and use. Priority is, therefore, given to exploration/pre-investment work, rehabilitation and expansion of existing mines, development of small, medium or large scale production of coal for domestic consumption and large scale coal production for export. In all cases the Bank supports the development of associated transport infrastructure.

13. Bank lending for renewable energy (in addition to hydro power) is focused on assisting developing countries to meet their critical fuelwood needs and to develop their potential for producing alcohol from biomass to substitute for gasoline and, possibly, to be used as chemical feedstocks. Fuelwood lending has risen substantially in recent years, but it is estimated that a five-fold increase in the current rate of planting would be needed to ensure a reasonable balance between fuelwood demand and supply in LDCs by 2000. The Bank's lending program aims to at least double the current rate of reforestation by 1985, and to create the technical and institutional infrastructure necessary for larger planting programs in the future. A strong emphasis is also given to introducing more efficient woodstoves and charcoal kilns which can substantially reduce fuelwood requirements; this would include technical and sociological investigations aimed at accelerating the acceptance of such stoves by the target population. Lending for alcohol production will be encouraged where it is economically promising; i.e., in countries with the potential for producing low cost biomass (e.g., Brazil) or those with "surplus" biomass (usually molasses) that can be economically converted to alcohol. Such projects presage a more aggressive approach to other alternative and synthetic fuels later as proven technology becomes available and appropriate, and economic implications are better understood. The Bank may, on occasion, finance pilot projects for demonstration of particularly promising new technologies, such as oil from shale and coal gasification projects in countries with abundant shale or low cost coal and a deficit in traditional hydrocarbons.

14. Energy efficiency will receive increased attention in all aspects of Bank lending, primarily through the development of appropriate energy pricing and demand management policies. Since most commercial energy in LDCs is consumed in the transport, power and industrial sectors, those areas of Bank lending will play a major role in optimizing LDC energy consumption. Direct lending for energy conserving projects, such as industrial retrofitting, will initially emphasize improved maintenance and management of plant operations and the financing of high return investments in energy-intensive industries (refineries, steel, cement, chemicals) to reduce their energy consumption and/or switch to cheaper fuels.

Trends Through the 80s

15. The current FY81-85 lending program in Table 2 reflects the discussion above. The "desirable" program, discussed by the Board last August, could not be financed by the Bank without upsetting the overall sectoral balance of its lending; it is the subject of current discussions for an energy affiliate. Both programs reflect heavy emphasis on oil and gas, coal, fuelwood, and electric power -- the best answers to LDC fuel problems for the rest of the decade. Both programs also reflect the important catalytic role of the Bank in mobilizing other sources of funding through its own lending. As the attached Table 2 shows, the proportion of total project costs to be met by Bank lending is about 25% for both the current and desirable programs. On the basis of recent trends, an equally large share of the total can be expected to be generated through cofinancing with other official and commercial sources. <sup>1/</sup> The LDCs themselves will, of course, have to display extraordinary efforts to mobilize from their own resources the balance of financial resources required. Nuclear power is not mentioned, but would be considered by the Bank in the event that economic desirability, the capability to manage the technology, and the non-availability of other sources of finance all come to pass.

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<sup>1/</sup> Over the period FY77-81, Bank Group lending of \$9.6 billion for projects in the energy sector has been associated with \$9.8 billion of external cofinancing (Table 3).



*table revised subsequently*

Table 1

ENERGY LENDING PROGRAM FY71-82 \*

	FY71-75 (annual avg.)		FY76-80 (annual avg.)		FY80 (actual)		FY81 (est.)		FY82 (planned)	
	No. Proj.	Amt.	No. Proj.	Amt.	No. Proj.	Amt.	No. Proj.	Amt.	No. Proj.	Amount
Oil and Gas	0.8	34.2	3.8	139.2	13	385.0	14 <sup>c/</sup>	786.6	19 <sup>b/</sup>	699.0
Electric Power <sup>a/</sup>	13.6	524.2	19.8	1,358.8	25	2,392.0	17	1,279.0	23	1,560.0
Coal	-	-	0.4	16.4	1	72.0	1	10.0	3 <sup>d/</sup>	435.0 <sup>d/</sup>
Fuelwood	-	-	n.a	n.a	14	34.8	10 <sup>e/</sup>	86.0 <sup>e/</sup>	12	105.5 <sup>e/</sup>
Alcohol	-	-	-	-	-	-	1	250.0	1	5.0
Ind. Retrofitting	-	-	-	-	-	-	-	-	2	127.0
Refineries	-	-	-	-	-	-	-	-	1	80.0
<u>Total</u>	<u>14.4</u>	<u>558.4</u>	<u>23.0</u>	<u>1,498.0</u>	<u>39</u>	<u>2,883.8</u>	<u>32</u>	<u>2,121.6</u>	<u>47</u>	<u>3,120.5</u>

<sup>a/</sup> Because power projects are often brought into the lending program toward the end of the fiscal year as replacement projects, the actual amounts are likely to be 30-40% above programmed lending.

<sup>b/</sup> EGY has planned 24 projects (including 8 "supplementary" projects) totaling \$830.5 million.

<sup>c/</sup> EGY estimates 16 projects totaling \$889.2 million.

<sup>d/</sup> The US\$435 million applies to two of the three projects in the current lending program. An amount has not yet been identified for the third project. In addition IPD is preparing 3 other projects amounting to US\$100 million.

<sup>e/</sup> Includes fuelwood components.

\* Under supervision there are 22 oil and gas projects and 136 electric power projects and 2 coal projects.

n.a not available.

Sources:

Table IVb: FY82 Lending Operations Monthly Report as of 12/31/80  
 Table IVb: FY81 Lending Operations Monthly Report as of 12/31/80  
 Table IV : IBRD & IDA: Country Lending Programs Through FY85 as of 10/31/80

TABLE 2

CURRENT AND DESIRABLE WORLD BANK ENERGY LENDING PROGRAMS,  
FY 1981-85

(Million current US dollars)

	Current		Desirable	
	Lending Program	Total Project Cost	Lending Program	Total Project Cost
<u>Coal and Lignite</u> /a	840	4,270	2,000	7,350
<u>Oil and Gas</u>				
Predevelopment	1,020	2,610	2,410	5,850
Oil Development /b	1,755	5,900	3,320	12,150
Gas Development /c	1,210	3,250	2,270	5,875
	<u>3,985</u>	<u>11,760</u>	<u>8,000</u>	<u>23,875</u>
<u>Refineries</u>	150	400	1,000	3,100
<u>Renewables</u>				
Fuelwood	425	850	1,100	2,200
Alcohol	200	2,100	650	4,550
	<u>625</u>	<u>2,950</u>	<u>1,750</u>	<u>6,750</u>
<u>Electric Power</u>	7,590	37,950	11,000	47,450
<u>Industrial Retro-</u> <u>fitting</u>	<u>0</u>	<u>0</u>	<u>1,250</u>	<u>3,825</u>
<b>TOTAL</b>	<u><u>13,190</u></u> /d	<u><u>57,330</u></u>	<u><u>25,000</u></u> /d	<u><u>92,350</u></u>
Bank Share of Total Project Cost (percent)		23		27

/a Includes coal gasification projects.

/b Includes heavy oil projects.

/c Includes methanol.

/d Does not provide for any lending to China.

**Note:** On completion, the projects included in the Current Lending Program are estimated to produce (or in the case of electric power and industrial retrofitting projects, to save) energy equivalent to 1.62 million barrels of oil per day (mbdoe) or 5.3 percent of the developing countries' projected energy consumption in 1990. The corresponding estimates for the Desirable Lending Program are 2.9 mbdoe and 9.5%, respectively. Refineries, which add substantially to the value of petroleum products but not to energy output or savings, are excluded from the calculation.

**Source:** "Energy in the Developing Countries".



WORLD BANK LENDING AND CO-FINANCING IN THE ENERGY SECTOR, FY77-81

	<u>FY77</u>	<u>FY78</u>	<u>FY79</u>	<u>FY80</u>	<u>Estimate FY81</u>	<u>Total FY77-81</u>
<u>Bank Group Lending for Energy (US\$M)</u>						
Electric Power	951.5	1,146.2	1,354.9	2,392.3	1,270.0	7,114.9
Oil & Gas	150.0	-	112.4	385.0	784.2	1,431.6
Coal & Coal Gasification	-	-	-	72.0	180.0	252.0
Fuelwood & Biomass	-	6.2	31.8	82.3	322.3	442.6
Refineries & Retrofitting	-	-	58.0	29.0	223.0	310.0
<b>TOTAL</b>	<b>1,101.5</b>	<b>1,152.4</b>	<b>1,557.1</b>	<b>2,960.6</b>	<b>2,779.5</b>	<b>9,551.1</b>
Number of Operations	18	21	27	44	39	149
<u>Memo: Loans and Credits for Energy with Co-financing (US\$M)</u>						
	<u>770.5</u>	<u>507.2</u>	<u>979.6</u>	<u>2,270.0</u>		
Number of Operations	12	12	18	29		
<u>Co-financing by Source (US\$M)</u>						
	<u>FY77</u>	<u>FY78</u>	<u>FY79</u>	<u>FY80</u>	<u>Estimate FY81</u>	<u>Total FY77-81</u>
Official	188.3	251.1	201.0	593.4	510.0	1,743.8
Bilateral	213.0	268.3	144.2	744.1	616.9	1,986.5
Multilateral	129.5	81.7	215.4	2,121.3	1,000.1	3,548.0
Export Credit	363.0	88.0	126.9	749.7	1,204.9	2,532.5
Private	893.8	689.1	687.5	4,208.5	3,331.9	9,810.8
<b>TOTAL</b>						
<u>Co-financing by Sub-Sector (US\$M)</u>						
	<u>FY77</u>	<u>FY78</u>	<u>FY79</u>	<u>FY80</u>	<u>Estimate FY81</u>	<u>Total FY77-81</u>
Electric Power	779.8	689.1	559.5	3,814.9	1,775.9	7,619.2
Oil & Gas	114.0	-	44.5	376.5	366.0	901.0
Coal & Coal Gasification	-	-	-	5.7	480.0	485.7
Fuelwood & Biomass	-	-	6.5	6.7	259.0	272.2
Refineries & Retrofitting	-	-	77.0	4.7	451.0	532.7
<b>TOTAL</b>	<b>893.8</b>	<b>689.1</b>	<b>687.5</b>	<b>4,208.5</b>	<b>3,331.9</b>	<b>9,810.8</b>
<u>Co-financing by Source and Sub-Sector (US\$M)</u>						
	<u>Official</u>	<u>Export Credit</u>	<u>Private</u>	<u>Total FY77-81</u>		
Electric Power	3,165.9	2,710.5	1,742.8	7,619.2		
Oil & Gas	106.5	481.5	313.0	901.0		
Coal & Coal Gasification	380.0	100.0	5.7	485.7		
Fuelwood & Biomass	22.2	-	250.0	272.2		
Refineries & Retrofitting	55.7	256.0	221.0	532.7		
<b>TOTAL</b>	<b>3,730.3</b>	<b>3,548.0</b>	<b>2,532.5</b>	<b>9,810.8</b>		

Note: The figures in this table underestimate the extent of the association of private finance with Bank Group lending for oil and gas because they do not include private financing of developments made possible in conjunction with a Bank Group loan but not included in the narrow definition of the project. For example, not included in these amounts is about US\$300 million for the cost of production facilities financed by Union Oil in conjunction with the Thailand Natural Gas Pipeline II project. Nor do the figures include, for example, private sector investments undertaken as a result of Bank financed oil exploration projects. The figures also do not include co-financing data for 33 small pilot fuelwood components in area and rural development projects, for 4 projects containing small biomass components, or for small components for retrofitting in industrial and DFC projects.