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ACTION MEMORANDUM FOR DAA/DS/DT, MR. JOHN BRUCE

FROM: DS/EY, Alan B. Jacobs *SM for*

DATE: 5 March 1979

SUBJECT: Third World Urban Energy Project (Unsolicited Proposal)
from Overseas Development Council, Energy Programs
Support Project 931-0003)

Problem: Your approval is needed for this activity.

Background: The Overseas Development Council has submitted an unsolicited proposal to prepare a concept paper on urban energy issues in developing countries. The proposal was originally submitted to the Africa Bureau to complement the study, Energy for the Villages of Africa, which the ODC prepared in February 1977 with the help of a grant from AID. The Africa Bureau indicated that the activity was more appropriate for the central energy office and so the ODC submitted the proposal to the Office of Energy.

The study will support directly AID's efforts to develop a coherent energy assistance program for LDCs. Most of the effort to date has been in the rural energy area. The urban area has been neglected by most developing country energy specialists, both within and outside AID. To assist AID in developing an energy program which meets the needs of both urban and rural poor, it is necessary to study the "state of the art" on the urban sector. This proposed ODC study will do.

The ODC proposes to organize a workshop to discuss the study with AID and other energy specialists. It is hoped that an urban energy program for AID will develop out of the workshop. This approach has been used successfully in exploring possible AID initiatives in the rural energy sector. This proposed activity has been discussed with DS/UD and has its support.

Recommendation: I recommend that you approve the unsolicited proposal of the Overseas Development Council and that \$50,147 of small activities funds be used for this project.

Approved *[Signature]*

Disapproved _____

Date 3/7

Attachment:
ODC Proposal

Clearance: DS/UD: EChetwynd(sub) Date: 2/15/79
DS/PO: RSimpson Date: 3/2

→ I hope we can word this to bring a better focus to this scope of work which plan a more ambitious for a \$50,000. I fear getting an overly general superficial statement

THIRD WORLD URBAN ENERGY PROJECT

I. The Problem

The Congress in 1975 included a specific mandate to the President to launch "programs to help developing countries alleviate their energy problems through such means as research and development of suitable energy sources and conservation methods, collection and analysis of information concerning countries' potential supplies of and needs for energy, and pilot projects to test new methods of production or conservation of energy."

At the Bonn Economic Summit meeting of July 16-17, 1978, the participants agreed to intensify their national development assistance programs in the energy field and to develop a coordinated effort to bring into use renewable energy technologies.

In satisfaction of the Congressional mandate and consistent with the spirit of the Summit, AID has begun a number of energy projects especially emphasizing rural areas. But Third World policy makers cannot fully understand the rural energy problem except by viewing it as a continuum embracing farms, villages, market towns, secondary cities and principal cities. All are interrelated. They depend upon each other for energy supplies and for goods and services with energy components. For this reason, a change in energy use in one area will affect the others.

A solidly grounded energy strategy must be based on a greater understanding than we now have of several phenomena:

1. The Energy Implications of Urban-Industrial Planning

At the rate the major cities of the Third World are growing, urban

populations in the year 2000 will be nearly double their present size. Current trends suggest the additional 910 million urban residents will be crowded into existing cities mostly living in slums and squatter areas. Urban planners are urging that steps be taken to shape the future urban configuration to avoid this. If governments do attempt to control the size and direction of urban development, including the locating of future industries, this will have important implications for national energy

3. These implications need to be explored.

2. Understanding the Rural-Urban Web of Energy Interchange

Most modern energy is consumed in the primary city. For example, in Tanzania, 56% of the country's electricity is consumed in Dar es Salaam by only 3% of the country's population. Bangkok, with 7 percent of the population consumes 75% of Thailand's electricity. Already, industry consumes much of these countries' commercial energy, especially electricity. For example, more than 75% of India's electricity is consumed by the manufacturing sector.

Big city energy use patterns affect the availability of traditional and modern energy for secondary cities, market towns, villages and farms. Therefore, the energy problem of the developing countries needs to be approached in a comprehensive fashion, supplementing work already ongoing in the rural areas with a search for new understanding of the web of linkages in the energy field among major cities, secondary cities, market towns

*Year 2000 urban population size derived from, George Beier, et al., "The Task Ahead for the Cities of the Developing Countries," World Bank Staff Working Paper No. 209 (Washington, D.C.: World Bank, July 1975), p.iii.

and rural villages and farms. Understanding this complicated energy interdependence is essential to the development of sound national energy policies.

3. Intra-City Energy Problems

Once in the city, migrants from the country tend to settle in the poorer sections. Residents of such sections have very little modern energy even though the lower income groups may represent as much as 75% to 90% of urban people. The bulk of the energy needs of that group are for fuel for cooking and water heating usually in the form of wood or charcoal. The rest is consumed as kerosene for cooking and lighting, wood for warmth and petrol for public transport. Within the informal economic sector, traditional energy forms such as human muscle power, draft animal, wood and charcoal represent much of the available energy. If the migrants are employed it tends to be in the informal sector. That sector provides products and services for the modern sector and also holds a great pool of labor which trickles slowly into the modern sector. Thus, policy makers may focus on providing energy for the modern sector in order to speed that trickle or they may focus on improving the supply and efficiency of energy for the informal sector so that it can become more productive, or some combination of the two. This needs further study to increase our understanding of the implications of the problem for energy planning.

4. To What Extent Are Cities a Major Cause of Deforestation?

Some of the deforestation problem is observably the direct result of rapid urban growth which continues to use firewood or charcoal for most

of its domestic and small commercial and industrial fuel needs. In some areas, this trend has reached such proportions as to result in a deforested ring around the primary city. Similar, but not quite as severe results can be found around some secondary cities and larger market towns. How important is this aspect of the deforestation problem?

5. Is Conservation a Significant Option?

Since the lion's share of commercial energy -- especially fossil fuels -- is consumed in the modern sector of the major city of each country and since these cities are also large users of traditional energy, they are prime targets for improving energy economy. Energy conservation in the Third World embraces two dimensions. First and probably of least importance in the Third World is the need to restrain individuals and institutions from engaging in great luxuries that use vast amounts of energy. There are a few gas guzzler automobiles and a certain amount of pleasure driving and a number of energy intensive consumer durables but the amount of energy involved in luxury consumption is not great by Northern standards. This first dimension is a matter of restraining consumer demand. The second and most important dimension of energy conservation relates to inefficiency in energy application or technology. Even if all non-austerity demand were eliminated, there would still be great opportunities for conservation in the choices of energy technologies and of the uses to which they are put. Within cities energy inefficiency may be found in industry (obsolete processes and equipment) in domestic use (especially cooking), in the transportation fleet and in haphazard layout of cities necessitating

excessive movement between homes, jobs, schools, and other activity centers. Most of the homes, industries and transportation systems in the Third World cities of the year 2000 have not yet been built. How great is the opportunity for conservation when viewed in that time frame? In the next decade?

II. The Proposal

A. The Paper

It is proposed that the Overseas Development Council prepare a concept piece for AID which would:

1. Assemble and record the state of knowledge on each of these five topics.
2. Outline actions needed to develop a greater understanding of those items where the current data is inadequate.
3. Make recommendations for actions by Third World policy makers and aid organizations with particular reference to AID. The point is given further elaboration in the following discussion of policy issues which ODC would address. In some cases we would treat the topics implicitly rather than explicitly because of their sensitivity.

1. Energy Resources Potential

- a. Conventional - What is the feasibility of increasing conventional energy supplies? (oil and other fossil fuels, hydropower and where applicable, nuclear energy)?
- b. Use of Renewable Energy Sources - What are the prospects for substituting modern renewable energy sources for the wood, charcoal and kerosene used in slum and squatter areas (e.g., solar

collectors for heating, and/or cooking,) and in the informal economic sector (e.g., solar collectors for making beer and bread)?

c. Improved Traditional Use of Energy in Poor Areas - What are the greater prospects for use of improved traditional sources, (e.g., better use of animal draft power and urban periphery wood lots)?

d. Modern Renewable Energy Use in Modern Areas - What are the prospects for substituting renewable energy sources for conventional energy uses in the formal sector and modern residential parts of urban areas (e.g., solar process heat in lieu of oil in industry)?

2. The Allocation of Available Energy

a. What are the effects of energy price differentials on decisions to locate industries in major cities close to ports (where oil is imported) versus locating them elsewhere in the country?

b. Within the urban areas, what are the effects of a pro-modern sector bias in the allocation of energy on the physical quality of life of the slum and squatter area inhabitants?

c. What are the economic returns on energy investments in rural areas, market towns, secondary cities, and urban slum areas as compared with those in the modern sector of the primary city?

3. The Conservation Option

a. What are the major opportunities for conserving energy:

(1) in the formal sector of the economy (e.g., industry, transportation, commerce, and modern residences)?

- (2) in the slums and squatter areas (e.g., cooking)?
 - (3) in better planning for future urban development?
- b. Illustrative energy conservation techniques:
- (1) improved city planning,
 - (2) improved public transport, staggered commuter hours, priority lanes, weekend driving curfews and vehicles inspection
 - (3) improved building design, natural insulating material and more efficient lighting
 - (4) improved stoves, ovens and kilns

The paper prepared by ODC would draw from materials covering all three developing continents, Asia, Africa and Latin America. To the extent practical it would state generalizations applicable to the entire Third World but it would also identify differences that correspond to geography, to level of development and to degree of urbanization. The paper would include some illustrative case materials and certain categories of data would be presented country by country insofar as practical.

This paper would describe the urban energy problems of the Third World; identify kinds of actions that might be taken either to fill information gaps or to test ideas, techniques and technologies, and finally, it would suggest areas and methods of selectively intervening (by way of projects, institution-building, etc.) in the urban development process to deal with energy needs.

B. The Workshop

The Workshop will bring together practitioners and thinkers from the

fields of energy and urban development including urbanologists, appropriate AID personnel, and other development thinkers and practitioners. They will criticize the analytical paper on energy development, discuss the merits of, and procedures for developing an AID urban energy approach and suggest what, if any, steps should be taken to pursue actions proposed in ODC's paper.

III. The Method

ODC will prepare the paper by doing the following kinds of research in the U.S.:

- a. Survey ongoing activity in the field through correspondence and other contacts with bilateral donors and with DAC, World Bank, U.N. agencies and IEA.
- b. Consultations with experts in the U.S. with experience in urban areas of developing countries.
- c. Extensive literature search.
- d. Commission former Peace Corps Volunteers to write their experiences in urban areas of Africa, Latin America and Asia.
- e. Based on "a" through "d", prepare a paper and submit it to AID.
- f. Hold a small workshop of experts at ODC centered around the discussion paper.

Following upon the above, ODC and AID would conduct a joint review to help AID determine how best to use the paper and what, if any, follow-on activities are required.

IV. The Timetable

March 1979	AID review and approval of proposal.
March to June 1979	ODC conducts literature search, consultations with experts in U.S., and survey of donor activities. ODC commissions Peace Corps reports. ODC prepares a discussion paper and submits it to AID.
Late June or early July 1979	ODC circulates the discussion paper and holds a workshop of U.S. experts.
July 1979	ODC and AID consult with respect to follow-on activities.

V. Participants in the ODC Study

In addition to its own staff, ODC will engage one or more specialists who have expertise in the Third World urban and energy development to consult in the preparation and/or review of the paper.

ODC would commission a number of studies by ex-Peace Corps Volunteers (or others) who have recently returned from urban or market town communities. These would be descriptive, most non-quantitative (because they are depending on their memories) reviews of the energy regime of their particular community. We have used this resource many times before and have found it valuable.

VI A. Illustrative Budget: Preparation of Analytical Paper

<u>Staff</u>	<u>Time (Days)</u>	
Senior Development Specialist	36	
Junior " "	69	
" " "	47	
Secretary	44	
	Sub-total	\$14,290
	Taxes and Benefits (35% of \$14,290)	5,002
		<hr/>
	Total Salaries & Benefits	\$19,292
<u>Consultants</u>		
\$200 x 23 person days		4,600
<u>Lunch Seminars</u>		
20 x 4 x \$5.00		400
<u>Grants for former Peace Corps Volunteers</u>		
Preparation of Case Studies (5 x \$200)		1,000
<u>Miscellaneous</u>		
Xerox, Postage \$750		
Overseas Communications <u>250</u>		1,000
		<hr/>
DIRECT COSTS		\$ 26,292
INDIRECT COSTS (33% of Total Direct Costs)		8,676
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	TOTAL PROJECT COST:Preparation of Paper	\$ 34,968

VI B. Illustrative Budget: The Workshop

<u>Staff</u>	<u>Time (Days)</u>	
Senior Development Specialist	5	
Junior " "	10	
" " "	8	
Secretary	6	
Conference Coordinator	3	
Conference Chairman	3	
	Sub-total	\$ 2,913
	Taxes and Benefits (35% of \$2,913)	1,020
	Total Salaries & Benefits	<u>\$3,933</u>

Workshop

To be held in Belmont, Maryland or similar conference facility. 25 participants.

Cost includes meals and lodging for 2 nights @ \$80 per participant/night

\$4,000

Travel-Domestic

12 participants x \$250
Taxis - 12 x \$40

3,000
480

	Sub-total Workshop	<u>\$7,480</u>
	TOTAL DIRECT COSTS	11,413
	INDIRECT COSTS (33%)	3,766
	TOTAL PROJECT COSTS: WORKSHOP	<u>\$15,179</u>