Folder Title:	Power - Closing Report - 1974
Folder ID:	30248813
Subseries:	Early special evaluation studies working files
Series:	Special Evaluation Studies
Dates:	12/04/1974 – 12/15/1974
Fonds:	Records of the Office of Operations Evaluation
ISAD Reference Code:	WB IBRD/IDA OPE-09-01
Digitized:	05/17/2023

OED SPECIAL STUDIES
85035--03

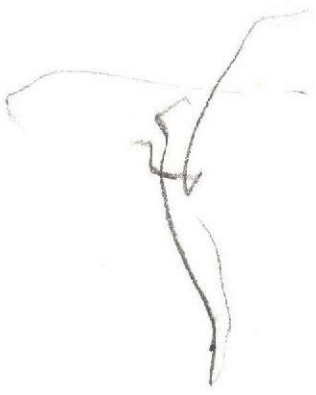
Power - Closing Report

1974 (Rec)

OPERATIONS EVALUATION DEPARTMENT

RECOMMENDATIONS FOLLOW-UP PROCEDURES: Main Stages

		As Applied to Two Evaluation Reports	
		Electric Power	DFCs
1.	Discussions of Draft Evaluation Report and Recommendations with operating departments		
2.	Issuance of Evaluation Report to Executive Directors	March 72	July 74
3.	Discussion (if any) of Evaluation Report by Executive Directors	May 72	-
	OPERATING DEPARTMENTS' RESPONSE		
4.	Request written response to each recommendation from departments responsible	July 72	Nov. 74
5.	Receive draft response	Oct. 72	Jan. 75
6.	Discuss draft response with responsible department	Nov. 72	Feb. 75
7.	Receive revised final response	Dec. 72	Apr. 75
8.	Memorandum of comment from OED	Jan. 73	
	REVIEW AND ASSESSMENT OF ACTION TAKEN		
9.	OED request review of Bank action by responsible department	Dec. 73	
10.	Receive such review	May 74	
11.	OED summary review of Bankwide action (reports and discussions)	July 74	
12.	Circulate widely first draft Closing Report, highlighting outstanding issues	Sept. 74	
13.	Receive comments on first draft and discuss to resolve issues	Dec. 74	
14.	Prepare second draft Closing Report (to Regional Vice-Presidents)	Jan. 75	
15.	Receive and consider comments on second draft	Feb. 75	
16.	Prepare third draft Closing Report (to Senior Vice-President)	Mar. 75	
17.	Finalize Closing Report for distribution to Executive Directors	Apr. 75	



December 19 - Discussion with Rovani & P.U. Division Chiefs (Rovani's office) focussing on points underlined in report

CLOSING REPORT ON ACTIONS RELATING TO RECOMMENDATIONS OF THE ELECTRIC POWER EVALUATION REPORT

In 1971 the Operations Evaluation unit carried out, as one of its first efforts, a review of Bank operations in the electric power field, mainly on the basis of ex-post assessments, against original objectives, of a large and diversified sample of projects for which the Bank had lent a cumulative total of about $1 billion to ten different power companies - three in Colombia and one each in Argentina, Brazil, Ethiopia, Ghana, Malaysia, Mexico and Singapore. The results of this study were presented in "Operations Evaluation Report: Electric Power" (IBRD Report No. Z-17) dated April 1972. Bank assistance to the Colombian power sector was also treated somewhat more comprehensively in one chapter of the report "Bank Operations in Colombia: An Evaluation" (IBRD Report No. Z-18) which was issued shortly thereafter. Both studies included certain suggestions regarding future Bank activity in the field of electric power which were discussed with the relevant operating departments both before and after presentation of these reports to the Executive Directors and were in the main agreed to be worthy of pursuit.

Bank review

The purpose of the present document is to report briefly on actions since taken by the Bank that relate to the suggestions made. It is based on a review of relevant research papers and operational guidelines issued by the Bank over the last two years and of appraisal reports for power loans approved in FY 1974 as well as on a series of discussions in July 1974 with all operating units principally responsible for electric power work. After recalling the main conclusions of the evaluation studies and indicating the main lines of recent Bank activity in the field of electric power, this

draft of the report received in November and comments on our meetings with relevant Bank managers in December 1974

report systematically summarizes each of the original suggestions, the response that the Bank operating departments gave at the time and relevant actions since taken. An overall assessment, ~~and summary of points that, in the opinion of the Operations Evaluation Department, require further attention,~~ is given in the concluding paragraphs.

The evaluation studies found that the rapid pace of power system expansion achieved in the developing countries between 1950 and 1970 had depended crucially on Bank financing and concluded that the wider pattern of Bank action had been notably effective in achieving the main preoccupation that the Bank had developed in its work in this field: minimizing long-run (financial) costs of power system expansion by such measures as improvements in sector organization, careful advance investigation and planning to enable selection of the most economic path of system expansion, use of international competitive bidding and assuring adequate cash-flow to the utility to prevent construction interruptions. The Bank had in particular in several instances made significant contributions to institutional rationalization by urging amalgamation of regional power companies, or cooperative arrangements, to permit achievement of scale economies, and its financial covenants, which had become steadily better in form, showed evidence of having been causative factors in the ~~steady~~ continuous improvement of financial performance demonstrated by most of the companies. Notable internal organizational improvements had also been stimulated by the Bank in several companies, and the two cases among all ten that still showed considerable institutional weakness were ones where, in complex political circumstances, responsibility for power supply within relatively small areas remained divided. Major cost overruns had occurred on some projects, but generally for reasons that would have been

hard to foresee, and in the case of very few plants were they large enough to raise doubts in retrospect as to the economic validity of projects selected. Only in few cases had there been temporary unproductive building ahead of demand, due to faulty planning.

The main theme of the report's suggestions for the future was that the Bank could make an important contribution to further improving its own selection of power projects and the role of its power customers in development by helping them to cope with fundamental questions, essentially related to the links between power supply and development, which it had largely bypassed in the past. How quickly should power demand be allowed or encouraged to grow? How much can electricity supply induce development or improvements in efficiency in other sectors (e.g. small industry and agriculture)? How much expenditure should be allocated to electrification of villages or small towns presently unserved, and how should they be selected? How much effort should be devoted to expanding the coverage of the power system as opposed to improving reliability standards on the existing system? What are appropriate risks of load shedding to run under different economic conditions? Under what circumstances is it worthwhile from the socio-economic viewpoint to provide power at less than cost to serve? The report asked the Bank to develop appropriate methods of analysis and project appraisal to help bring answers to these basic dilemmas.

Bank and IDA lending for electric power, after falling sharply in FY 1973, reached a new peak in FY 1974, in excess of $750 million, in real terms 20% above the average annual amount of power lending committed in 1969-73 and envisaged for 1974-78.[1/] The number of projects, at 14, was about the same as the

1/ Revised IBRD/IDA Program 1974-78 of June 1974.

average number approved in each of the previous five years; but three of the loans were in excess of $100 million, including one of $148 million, the largest single project loan ever made by the Bank for the Elbistan lignite-fired thermal plant in Turkey. A somewhat surprising trend, in light of earlier expectations, is a sharp drop over the last year in the share of power distribution in the Bank's lending and in the projects supported, as shown by the following table.1)

IBRD/IDA Lending for Electric Power FY 1970-74
(current US $ millions)

	1970	1971	1972	1973	1974[a]
Loan/Credit Amounts Approved	556.0	500.9	520.6	321.5	754.8
% for Distribution	20	19	20	14	1
Total Project Costs[b]	1512.1	816.1	2425.5	883.1	2958.0
% for Distribution	25	18	19	30	0.5

a/ excluding three small supplementary loans committed under amendments to earlier loan agreements to help cover cost overruns.

b/ excluding interest during construction.

In each of the years 1970-73 two of the loans/credits approved were predominantly or very largely for distribution expansion - in such countries as Argentina, Brazil, Ghana, Iran, Nigeria and Turkey - and another four projects included some distribution component. FY 1974 power lending included only two projects with a distribution component and in both it was quite small. No integrated rural development project approved to date has had an electric power component, but one under preparation for Mexico may be the first to do so.2)

An important innovation in the Bank's power work, sponsored by the new Public Utilities Department that emerged from the Bank's reorganization

1) The table refers to loans mainly destined for electric power.

in October 1972, is the establishment of regular series of publications of research papers and operational guidelines. Over the last eighteen months numerous papers prepared by Bank staff and consultants have been published in this form, ranging from guidelines on technical cooperation with other international agencies to a major review of the changing relevance of nuclear power for developing countries. Some of the research done on electricity pricing and rural electrification is now culminating in an important policy statement on the economic analysis of public utility projects,[1] carrying the Bank's approach much beyond cost minimization and demonstrating how the incremental return concept that has come into use in the Bank in the last few years can become a meaningful tool of economic analysis once the relationship between prices charged for utility services and their marginal costs is established.

1. System Extensions

Original Recommendation:

The Bank should expedite work to develop techniques for analyzing the economic validity of extending public power supply to new areas, such as marginal zones of the cities, surrounding villages or small towns or larger regions presently unserved.

Bank's Response:

The Bank agreed with the need to study this matter on a priority basis and to identify economic and social effects of system extensions to smaller and less dense markets, with a view to finding practical ways to improve cost/benefit techniques and also provide a sounder basis for justifying departures from strict economic/financial pricing policies in order to meet social objectives.

Review of Action:

The Bank has carried out, on schedule, a major research study of rural electrification experience in El Salvador and produced a number of

[1] Economic Evaluation of Public Utilities Projects (September 30, 1974)

internal instructions and papers relating to the economic justification of such schemes.[1/] Further field study is underway in connection with a small rural electrification component to a power loan made to Ecuador in February 1972. The major conclusions derived from these studies can be summarized:

a) Rural electrification is best undertaken within the framework of an integrated regional development program, and even in the (usual) absence of such a program it is desirable to move as far as possible to examining the potential in this broad context.

b) Successful village electrification normally requires that the village average per capita income be above a particular "threshold" level (for example, $50-60 in El Salvador in 1972) at which demand begins to develop, but growth of demand can be very rapid and it is essential to focus on the prospects for this.

c) Economic benefits in excess of prices charged for power (mainly increases in production made possible by power supply and savings on alternative fuels) can and should be routinely assessed for productive uses of electricity (such as irrigation, agro/village industries, water supply works).

d) Comparable benefits in excess of prices charged for household consumers (from savings on alternative fuels and greater value of higher-quality energy) are so difficult to estimate soundly at reasonable cost and may well normally be sufficiently small that revenue projections may generally be taken as a reasonable indicator of gross benefits of such consumption, implying that electrification for households alone in rural areas is generally unlikely to be economic

e) It is essential to take a long-run (20-year) rather than a medium-run (5-year) term of analysis due to the importance in the economic analysis

---

1/ Public Utility Note 6, "The Appraisal of Village Electrification Projects" (August 1, 1973) ~~Draft Policy Paper~~, "Issues in Rural Electrification" (July 24, 1974). IBRD Report No 517 Circulated under Secretary's Memorandum See M 74-636 of September 12 1974

of both the prospective growth of demand and of possible ~~scale~~ scale economies from increasing network utilization.

f) Tariffs may be set below long-run marginal costs during the early years because of the generally high fixed costs, the need to promote the use of the service, or social reasons (to help small business and low-income families), but subsidies (or taxes) should be made explicit and tariffs should within five-ten years aim at reflecting the level and structure of long-run marginal costs of supply in order to secure efficient allocation of resources and to avoid inequities with the much larger number of rural families in most developing countries who will remain without electricity (probably still about 75% in the early 1980s).

g) Non-quantifiable benefits in excess of revenues (e.g. educational or other effects on households) may sometimes be sufficiently significant to warrant undertaking a project whose incremental return based on financial returns plus an allowance for productive users' benefits (in excess of prices charged) is slightly below the opportunity cost of capital, but this can only be a matter of judgment.

The appraisals of projects approved by the Bank and IDA in FY 1974, even those with significant distribution components, do not reflect any of this work; However, a preliminary appraisal has been made of a major rural electrification project in India, giving special attention to economic justification and partially drawing on the Bank's research. ~~And~~ direct application of research results is ~~planned~~ for a rural electrification project envisaged in Iran.

Beyond practical application and testing of the approach developed, there appears to be need for further work on methods to cope with (a) the case of countries at much lower development level than El Salvador, for instance in West Africa, to see whether the same considerations apply and b) the ~~special~~ problem of marginal zones of urban areas, partly due to the difficulty of charging there tariffs different from those of the rest of the urban area, even though the cost of service is higher than in quarters already developed.

2. New Connection Policies

Original Recommendation:

The Bank should try to assess, in the economic evaluation of power projects at both the selection and appraisal stages, whether utility policies regarding the connection of new customers and extension of distribution systems are satisfactory in the sense that they respond to any opportunities that may exist for accomplishing significant development benefits from spread of electrification - for example, increasing efficiency of small industry or aiding production and education in rural and marginal urban areas.

Bank Response:

The Bank stated that the necessary judgments would be made in the course of appraisal missions and that they would be aided by the results expected from the research discussed under Recommendation 1 which would be disseminated among the staff as and when available.

Review of Action:

The Bank's own research and India's experience of rural electrification do indicate that the application of electricity for agricultural and industrial purposes in particular can bring substantial development benefits. However new connection policies do not yet appear to be assessed by appraisal

missions for power projects generally, and few appraisal reports even give a projection of the number of new consumers expected to be connected. This may in part reflect the very low share of distribution in recent power lending and the fact that some loans have been to bulk suppliers, although, from the point of view of project justification and utilization, new connection policies of ultimate retailers would seem to warrant attention, whatever the Bank is directly helping to finance. This lacuna in the Bank's analysis may be filled with rigorous application of the proposed new approach to economic assessment of public utility projects emphasizing the relationship between marginal costs of supply and charges. It should enable the Bank to advise its borrowers constructively on whether the pace of connection of new consumers should, from the economic point of view, be accelerated or reduced.

3. Self-Help for Distribution Expansion

Original Recommendation:

The Bank should encourage country authorities and power companies to find appropriate institutional mechanisms for mobilizing self-help efforts in distribution expansion.

Bank Response:

The Bank undertook to be on the look-out for successful experience in this field with a view to incorporating it in projects supported or otherwise propagating it, but it did not think that any general guidelines could be prescribed.

Review of Action

The Bank's rural electrification research touched usefully on the role of cooperatives in rural power supply and pointed out that the labor component of a rural electrification project may constitute up to 25% of total investment costs, so that use of self-help arrangements may make the scarce funds available for rural electrification go further. The Bank is

aware of some successful applications of self-help in the power field, for instance in administration, billing, and actual construction of lines (e.g. in Andhra Pradesh and parts of Colombia), but no systematic effort seems to have been made in operational work to propagate experience.

4. Generation and Transmission Reliability Standards

The Bank should help develop, and require of utilities and consultants, more systematic procedures for rational determination of reliability standards appropriate to different countries and areas, with a view to eventual presentation in appraisal reports of explicit justification for standards selected.

The Bank indicated its agreement with this general proposal but emphasized the difficulties of estimating the economic costs involved by lowering standards of service. Research and guidelines were intended to lead to appraisal reports explicitly stating the standard of risk of failure to supply implied in project proposals, even if they could not yet assess the economic optimality of this standard.

The related research was cut short by staff shortages, but some useful notes were circulated.[1/] ~~Apparently largely at the initiative of the consultant, a~~ A recent system-planning study for the Comision Federal de Electricidad (CFE) in Mexico, reviewed the various generation and reliability standards to be retained for large interconnected systems as well as some crucial economic indicators to be considered in the selection of a particular reliability standard. ~~More generally,~~ The Bank staff has continued to review these matters, in connection with lending operations, on the basis of

1/ Public Utilities Note 3, "Generating Plant Reserve Margins" (June 20, 1973). See also Annex 1 to Public Utilities Research Report 3 "Framework for Electricity Tariff Studies" (March 18, 1974).

experience and judgment, but there is no evidence that they are getting more systematic attention than in the past. Indeed appraisal reports appear typically to present somewhat less information than they used to (particularly on capacity reserve), and consultant terms of reference for feasibility studies are not reviewed, and complemented, with a particular eye to these matters.

Relative neglect of these matters may be justified by the fact that many of the more important Bank borrowers of recent years have been suffering shortages, more or less severe, of generating and bulk-transmission capacity and may well be expected to continue to do so with the new prospects, following the increase of oil prices, of more rapid growth of demand for electricity and higher costs to meet it. Nonetheless there are countries where this does not seem to be the case, for instance Brazil, Ethiopia and some East Asian countries, and it would not seem unreasonable for consultants, or borrowers, to be asked to estimate

(a) the savings in system costs that would result from adoption of the next lower standard of bulk supply reliability than the one proposed.

(b) the amounts of load shedding that might be required if this lower standard were applied.

This would generate useful information for consideration in connection with tariffs at system peak, the nature of loads, adequacy of load shedding arrangements, etc. It may also be useful to summarize the Mexican study, referred to above, for circulation.

5. Distribution Reliability Standards

Distribution standards should be subjected to the same treatment as mentioned above for Generation and Transmission, and the Bank should

encourage borrowers to carry out systematic studies to optimize distribution standards to local conditions.

The Bank expressed general agreement with these propositions and, emphasizing again some of the technical difficulties involved, referred to planned research to be undertaken.

A useful note has been prepared on the aspects that need to be examined by appraisal and other technical missions,[1/] and most of the planned research (particularly covering European practices) has been carried out, but it has not been possible to extend that research yet, as envisaged, to the case of a sample city in a developing country.

The work so far done suggests that there may be considerable scope for saving on costs simply to reach presently intended standards in many developing countries. And there is considerable interest in this subject within the Bank. An optimization study, of approximately the nature suggested in the evaluation report, was called for by the Bank in connection with the April 1973 loan for the Istanbul Distribution project. More broadly, it is envisaged that the consultants who have done the reseach on European practices for the Bank may participate in selected operational missions and that some specific studies may be undertaken by Bank staff to seek scope for reducing the cost of distribution, particularly a study of power development in East African countries, partly stimulated by concern about the possibility of distribution standards presently being excessive in Zaire. A consultant study focussing on this aspect is underway in Ghana, at the initiative of the Ghanaian authorities, with a view to preparing a project for submission to the Bank.

1/ Public Utilities Note 4 "Standards of Urban Electricity Distribution" (June 28, 1973).

6. Urban Context

Appraisal and sector reports could usefully consider power in its urban context and treat explicitly the question of balance between power and other services and facilities in terms of the quantity and quality of their supply.

The Bank took the view that appraisal teams had neither the opportunity nor the ability to make judgments about the adequacy and quality of other services compared with power and that anyway these were not in practice very serious issues, except possibly in rare instances in which case they would be given special treatment - as was being done at the time in a particularly intensive effort on Istanbul, involving several loans for different services and numerous studies. Normally, it was felt, these issues would be treated in the Bank's operations at the time of developing the country lending program and in discussions with Governments as to appropriate projects for Bank consideration.

Several cases of imbalance of urban services, with power being consistently more plentiful and better in quality than other services (particularly water), have been encountered by the Operations Evaluation Department in its work on completed Bank-assisted projects. It does seem that a problem has existed, at least in the past, and there is no reason to suppose it does not continue. If appraisal missions are not able to treat this matter, perhaps President's Reports should reflect the clear judgment of the Bank's program officers regarding the risk of the problem recurring in connection with the proposed project, possibly with support in the form of statistics on existing relative availability and coverage of different utility services in the principal urban areas to be supplied.

7. Tariff Structures

The Bank should further increase the attention given in recent years to tariff structures, systematically analyzing wherever possible the extent to which tariffs charged to different consumer groups reflect social marginal costs so that deviations may be explicitly justified in terms of (a) effective means of taxation of inelastic consumers, (b) subsidies warranted to induce consumption because of resultant economic benefits or (c) price distortions elsewhere in the economy.

The Bank accepted this recommendation and planned research, case studies and production of appropriate guidelines, but it stressed, as an obstacle to progress the shortage of qualified people in the Bank and in borrowing institutions to work on these problems.

With the aid of consultants the Bank has produced research papers[1/] of high quality in this area, undertaken case studies (in Sudan and Tunisia) and prepared the guidelines envisaged.[2/] The specific points raised in the evaluation report recommendation now appear to be very generally accepted. Virtually all appraisals of power projects now include some treatment of the borrower's tariff structure, and the Bank has increasingly raised questions about major deviations between charges to particular consumer groups and the costs to supply them, and itself studied them in detail or called for their review by consultants and borrowers (for instance in Burma, Sudan, Malawi, Turkey, Algeria in recent years). The analysis will be further deepened as the research results are fully applied and as the new approach to economic evaluation of utility projects mentioned earlier comes into general use.

1/ Principally, Public Utilities Research Paper 1, "Economic Analysis of Electricity Pricing Policies: An Introduction" (January 9, 1974) and Research Paper 3, "Framework for Electricity Tariff Studies" (March 18, 1974).

2/ Public Utility Note 5, "Pricing in Power and Water Supply" (July 1973).

The main constraint to more frequent analysis of tariff structures against marginal costs appears to have been the shortage of appropriate Bank and consultant staff.

8. Shadow Prices

Shadow prices should be used in the economic analysis of project validity in all appropriate circumstances, and they may be reflected if necessary in utility tariffs.

The Bank agreed that ideally shadow prices should be used in benefit/cost analysis, project selection, design, and construction, and in the setting of tariffs, although in practice at the time their use was largely confined to a few cases of project selection and to the calculations of internal economic rates of return (based on adjusted financial data) and their use in design and bidding would be difficult in practice, reality.

Guidelines since prepared on analysis of rural electrification schemes and of tariff structures and on economic evaluation of utility projects do recommend that shadow prices for foreign exchange, labor and capital be used, whenever appropriate, in benefit-cost analysis, project selection, marginal cost pricing and internal economic return calculations. Actually, there has been a widespread recognition of their usefulness; shadow prices have been used mainly in the selection of least-cost alternatives (Nigeria, Gabon, Morocco and Iceland), in a few instances in economic return calculations (Turkey, Algeria), but seldom in marginal cost and tariff reviews (Burma only); the two tariff structure case studies (Tunisia and Sudan) did not use shadow prices despite their seeming relevance to these countries. Finally, shadow prices have not been included in the documentation provided to consultants responsible for early selection and design of projects considered for Bank financing.

— apparently because of difficulty in obtaining suggested values from [illegible]

Program Department

Strengthened internal arrangements within the Bank seem to be needed particularly, first, to ensure the use of appropriate shadow prices in tariff studies (where they may be of greatest relevance in the electric power field) and their incorporation in terms of reference to consultants selected for feasibility and system planning studies, and, second, to secure firmer help from country specialists in the choice of appropriate values. The latter problem should be eased with the decision recently made to undertake a special effort on the generation and application of appropriate shadow prices for selected countries in each region, as a preliminary step to generalized use of these concepts.

9. Fiscal Contribution of Power Companies

Examining the power company from the point of view of the contribution it can make to development, it might be useful to include regularly in appraisal reports a paragraph or two about fiscal aspects of the company's operations, in view of their importance in connection with tariffs, procurement, the financing of investment, maintenance of sound balance among utility services and Government revenue needs; borrowers studied show a very wide diversity of performance in this respect.

Stressing that all flows between Government and power company, as well as internal cash generation substituting for Government capital contributions, should and could quite easily be considered in assessment of the fiscal effects of borrowers' operations, the Bank planned to prepare instructions on this subject.

Fiscal aspects were referred to, and proposed for review by operational missions, in the previously mentioned Public Utility Note 5 issued in 1973, but shortage of staff led to postponement of the planned revision

of the appraisal checklist in which this matter was to be incorporated, and recent appraisal reports on power projects have not included the proposed special paragraph - although there appears to be a large amount of agreement that this would be quite feasible and useful, and telecommunication project appraisal reports have begun to include such a discussion. The Bank has continued to intervene on this matter, in some cases suggesting payment of taxes or dividends by the utilities to Government (e.g. Ethiopia and Ghana) and in others recommending or accepting exemption from such payments as a means to improve company profitability (e.g. Philippines and Iceland). More general draft instructions, of more elaborate nature, have recently been prepared for the handling of this aspect in all projects, not only those in power.[1/] It remains true that a good starting point, not difficult, would be a simple presentation in appraisal reports of the various aggregate flows (or substitutes of flows) between Government and power company, perhaps with some comparative figures from other power companies or other sectors in the same country.

10. Utility Performance Indicators

The Bank should give more systematic attention to technical and financial indicators of utility performance other than the overall rate of return on assets, and include in appraisal reports simple tables showing the trends of selected indicators over past years; in the case of serious problems, performance targets for the future could be agreed upon during loan negotiations (along with specific steps or studies to attain them) and regularly checked by project supervision missions.

1/"Pricing and Cost Recovery of Public Sector Projects," July 1974.

The Bank agreed that there were large potential benefits to be obtained from more systematic use of technical and financial performance indicators although at that time it seemed to think of them more for purposes of broad comparison between countries, to understand better existing situations, rather than as bases for targetting improvements.

Instructions for the systematic use of such indicators in appraisal reports, calling for presentation of target values, were issued in late 1973.[1] However they have not been followed in power project appraisal reports, except in a perfunctory manner in one. In another case an elaborate 'Plan of Action' was developed for the improvement of a borrowing utility in particular difficulties (PLN in Indonesia: Credit 399 of May 1973) and was presented in the appraisal report; in response to the Executive Directors' request during discussion of the proposed credit a progress report after one year was recently circulated to the Directors. The 'Plan of Action' gave time targets with regard to completion of certain steps and studies, but no numerical specifications of the overall improvements in performance (except for the operating ratio) that were expected to result.

There appears to be unanimous agreement in principle that greater use of efficiency indicators and targets would be useful in Bank power operations, although different emphases remain as to the most important uses of them. It may be that here too one or two of those who originally prepared the general guidelines should first show the feasibility and utility of the system proposed, on a demonstration basis, in connection with appraisal of one selected project; such a practical example may be easier for others to follow and appreciate than generalized guidelines in the first instance.

1/ Public Utility Guidelines 3, "Guidelines for Project Monitoring System for Public Utilities Projects," (November 8, 1973).

11. Power Planning Units

The Bank should give more attention in sector and appraisal missions and institution-building efforts to the functional adequacy of utility and national power planning units.

Pointing out that planning units needed to be examined for the adequacy of their staff, their techniques and their influence, the Bank agreed that this was an area requiring consistent priority. Guidelines emphasizing these points were to be prepared.

The guidelines could not be prepared due to staff shortage. Appraisal missions have normally given attention to the planning units, but their weaknesses are seldom subject to quick solution, although the possibility of major progress is illustrated by the number of companies which have moved over time from heavy reliance on consultants to doing almost all their own planning except of a most specialized type (e.g. in Thailand, Ghana, Tunisia, Algeria, Morocco and Iran).

It would seem desirable to prepare the brief guidelines envisaged on this subject and to seek more thoroughly and systematically than in the past every opportunity for consultants preparing feasibility and system-planning studies to include training in their terms of reference wherever suitable trainees are available.

12. Training

The Bank should systematically consider the needs for training and opportunities for promoting and assisting it, in project appraisals and reviews of consultant terms of reference.

This point was agreed to by the Bank, and covered by the Bank's general guidelines and memoranda on training in Bank/IDA projects.

Indeed, training has received in recent projects frequent and full attention, and substantial Bank funds in some cases (Indonesia, Papua and New Guinea). However, particularly close attention is apparently still required for training in planning and accounting (e.g. paras 11 and 13).

13. Financial Recording and Planning

Despite improvements achieved there remain weaknesses in borrowers' accounting systems and procedures, particularly with regard to cash-flow planning, which need additional emphasis.

The Bank stressed the time required to install effectively improvements in accounting systems and financial planning techniques, and it suggested that the problem might be less in diagnosis than in follow-up on improvements proposed or agreed. To facilitate work it envisaged the preparation of standard financial annex formats for appraisal reports and more supervision effort in this field.

The standard financial formats have not yet been agreed, but project supervision in this area has continued to receive emphasis, especially in cases where particular problems are encountered as, for instance, Iran recently. Bank staff resources could probably be made more effective, as is now being suggested within the Bank and as the IDB has illustrated in practice, by greater contact with and reliance on borrowers' auditors for upgrading accounting. As regards cash-flow planning, inclusion of a revised forecast in regular six-monthly reporting requirements to the Bank might usefully be generalized.

14. World Trends in Power Financing

In view of the importance of electric power in development investment and in developing countries' foreign debt and of the past predominance of

the Bank in this field and its desire to diversify its lending increasingly, the Bank should consider undertaking a systematic review of world-wide trends in capital requirements for power in the developing countries and of prospects for financing from other sources, to provide a perspective which would complement country and sector considerations in planning power lending.

The Bank agreed with this suggestion in principle but pointed out that staff constraints would not permit investing in the subject the fairly significant amount of staff-time that would be necessary.

In assessing the impact of the energy crisis on its member countries the Bank has in fact done some work on this subject at the global level[1/] and it has produced a paper adducing some of the general considerations relevant to estimation of future requirements for investment in electric power.[2/] Insofar as the recent changes in relative fuel prices ~~generally~~ tend to make electric power a relatively more attractive form of energy than previously although generating plants of higher capital cost are likely to have to be built increasingly, capital requirements for electric power, which have long accounted for a remarkably large part of loan financing between countries and internationally,[3)] may now become even more important. However, as mentioned, the Bank's own plans foresee lending for power in FY 1974-78 only about the same amount in real terms as in FY 1969-73 (about $3,100 million in FY 1974 prices); such lending would constitute 12% of all IBRD/IDA lending in the forthcoming period, compared with 18% in FY 1969-73. To deepen understanding of the feasibility and implications

in several important respects

1/ IBRD Report No. 477, "Prospects for the Developing Countries" (July 8, 1974).

2/ IBRD Report No. 477, Background Paper V, "Sectoral Adjustment to Higher Energy Costs" (July 8, 1974).

3) See original eval'n report

of this divergence in trends and to help effective implementation of the Bank's policy and program, renewed thought is being given to a more detailed investigation along the lines suggested in the evaluation report.

15. Sales of Participations in Bank Loans

If a situation recurs such as that in 1967-68 when the Bank desired to use Joint Financing to make up for shortages in the funds it could lend, in total or to particular countries, then serious consideration should be given to making arrangements with supplier countries whereby funds available for export financing might be used to buy participations in Bank loans in amounts directly related to contracts won by their nationals.

Although consideration was given to financial arrangements of this sort in connection with one loan, the point has not been of general relevance in the last few years insofar as the Bank has not had difficulty in raising funds directly. Sales of participations, which enjoy the advantage of considerable administrative simplicity compared with most joint financing arrangements, may possibly become relevant as one channel for applying the surpluses of oil-exporting countries to development.

16. Follow-up Evaluation Studies

Analysis of the Bank's financing of local procurement of electrical equipment and of the contribution such financing has made to the growth of efficient domestic equipment industry would be useful for future policy. Second, a more thorough study of the economic validity of the Volta River Project in Ghana might be worthile.

The Operations Evaluation Department has not had the time to pursue either of these studies to date. Doubts about the aspects of the Volta River Project questioned in the evaluation have remained and perhaps deepened,

but in connection with new projects the Bank is now giving considerable attention to possible resettlement problems, ecological side-effects and contractual terms between local authorities and international mineral concerns, so that further study of the Volta project might make only a limited contribution to strengthening Bank policy. The review of actual experience with the financing of local procurement would still seem worthwhile for execution as soon as the resources of the Operations Evaluation Department permit.

17. Central Power Institutions

The Bank should, wherever circumstances in a country permit, encourage development of a strong central institution in the power sector through which it might later channel lending in a sector program manner (as in the last few years with CFE in Mexico). Experience suggests that such an institution, is essential in order to develop (a) sound and well-coordinated investment planning, (b) balanced plan implementation among regions, and (c) effective and economical use of other sources of foreign financing such as supplier credits.

The Bank was generally in agreement with this recommendation, very much in line with, and indeed drawing on, its own successful experience in earlier years in this field.

The Bank has continued to try to reinforce established institutions of this type (e.g. in Brazil), to assist the development of newly created ones (e.g. in Indonesia, Nigeria, Turkey and Zambia), and to encourage their emergence in other countries (e.g. India, Yugoslavia, Cameroon and Morocco). Relevant studies have recently been started, wholly or partly at Bank request, in Colombia and Iceland. Probably the suggested sector-lending approach,

excluding detailed Bank appraisal of project components and therefore more economical in staff-time, could be applied more widely in countries where satisfactory central institutions of the type described have now been in existence for a number of years;

18. Unified Jurisdiction of Local Power Companies

Experience suggests that the Bank can make a major contribution by insisting on unified control of generation, transmission and particularly distribution in urban regions.

The Bank agreed that this point was relevant in certain circumstances.

While the Bank has made very useful contributions in this direction in earlier years the need for this emphasis is becoming rarer now with the rationalization already accomplished in many cities and regions and with the growth of national bulk supply agencies assuring generation and transmission. One case where the Bank has been trying to help resolve problems of divided jurisdiction in a relatively small area has been Istanbul, in connection with a loan approved in the first half of 1973.

19. Institution-Building Delays

Examination of cases where the Bank held up lending pending fulfilment by the prospective borrower of certain institutional conditions shows that the Bank has sometimes made major contributions to institutional strengthening in this way but more instances where it is doubtful whether the delays were really worthwhile, partly because they proved costly and partly because of doubt either as to whether the objective sought was important enough to warrant this cost or as to how effective the Bank action was in causing the change that finally came. The value of withholding loans has to be treated on a pragmatic case-by-case basis, bearing in mind costs and potential

benefits of delays as foreseeable at the moment of decision; general rules cannot be established.

Delays in power lending appear to have been fairly limited in the past two years and sound assessment of the delays that have occurred - principally on the loan for the Elbistan power plant in Turkey and on a planned loan for power development in Sudan - would require more study than is possible here. There may still be room for more frequent and systematic consideration, when delays are in prospect, of how long a delay (with its consequent costs, for instance of power shortage or higher-cost generation) may be warranted in the interests of any proposed precondition to lending.

20. Construction Cost Estimates

The rather frequent recurrence of substantial cost overruns on projects studied, especially in some countries, suggests that somewhat more use may be worthwhile of the specialized consultant firms that the Bank has sometimes hired in recent years to check project cost estimates, especially for major civil engineering works.

The Bank agreed with this recommendation, for appropriate circumstances, and planned in particular a paper on cost overruns on projects involving substantial tunnelling which would contain specific guidelines in this respect.

The paper was produced[1/] and, more generally, there now appears to be a wide awareness in the Bank of the advantage in some cases of having detailed revisions of cost estimates by specialized consultants. This fairly expensive technique has actually been applied only to one project approved over the last year - the Kafue project in Zambia - for which it appears at present that the original estimates and those of the specialist consultant (which were actually lower) were about equally close to the final bids received. An individual

1/ Public Utility Guidelines 6, "Guidelines for Estimating Costs of Tunnel Construction," (January 17, 1974).

specialist was also hired by the Bank to check the cost estimates on the mining part of the Elbistan project. Although cost overruns have been a major problem on some projects currently underway with Bank support, this has been mainly due to general cost-inflation and it does not seem that greater recourse should have been had for projects approved in FY 1974 to specialist consultants of the type described.

Conclusions

Judged against the conclusions of the evaluation report the Bank, over the last two years, has accomplished a large amount of useful and appropriate work in research and preparation of policy papers and guidelines. Priorities seem generally to have been correct. What now appear to have been the more important suggestions - for instance with regard to the economics of system extensions, tariff structures and distribution standards - have, for the most part, received considerable attention, while matters with more limited practical significance and relevance in the recent period - such as the issue of planning standards for bulk supply reliability and the suggested study of world trends in financing for power - received much less effort. The Bank is undoubtedly much closer now than it was two years ago to being able to assist its borrowers with finding solutions to the major dilemmas mentioned at the outset to this paper. Serious application of the new proposals with regard to methods of economic justification of public utility projects will cause several of these issues to be dealt with on a routine basis.

Despite these good research results, the actual operational effect of the evaluation report's principal suggestions must be considered to have been quite limited to date, whether in respect of application of research

results (as for system extensions and new connection policies) or in respect of implementation of the few direct improvements proposed (such as wide use of efficiency indicators and targets and standard discussion of fiscal aspects of power borrowers' operations). Only with regard to tariff structures, use of shadow prices and distribution standards, among the evaluation report's economic suggestions, is any broad impact on Bank operations beginning to be visible, and there are still gaps even in the treatment of these subjects.

Particularly with regard to some of the simpler actions proposed, and largely accepted in principle, such as with regard to use of efficiency indicators and treatment of new connection policies, a more sustained interest by the Executive Directors, with the posing of relevant questions in discussion of appraisal reports submitted in support of loan proposals, would undoubtedly have contributed significantly to securing the required effort in the Bank.

But the principal reasons for limited operational effectiveness of many of the most important suggestions in the evaluation report must be the shortage of economists in the Bank to work on power projects and the partial diversion of effort that became necessary late in 1973 to assess the implications for borrowing countries of the drastic changes in oil prices that then occurred. Review of the staff situation shows that the economist man-years effectively devoted to direct operational work in electric power has in fact fallen from about three in FY 1972 to only about two in FY 1974, partly for shortage of staff and partly because what public utility economists are available in several Regions have tended to be used primarily for work on water supply. As of July 1974 as many as half of the six economist positions in the Bank which might be considered to be principally for power work (including research) were vacant. Several departments seem to have found it very difficult to

recruit people with the competence and experience to work on electric power economics. As regards the 'energy crisis', it did undoubtedly hamper the transposition of research results into practical guidelines, effective review of Bank reports on electric power from the economic point of view and, most important of all, demonstration in the field of the methods and procedures proposed. That it is this scarcity of available economic expertise which has been the main problem is also suggested by the fact that the suggestions of the evaluation report with regard to institutional and engineering matters, admittedly fewer and less novel, can be said to have been implemented much more broadly than those with a heavily economic aspect.

On the assumption that the Bank responds to the 'energy crisis' not by using electric power as an easy means of making large resource transfers but rather by continuing past policies of seeking projects through which a special contribution can be made to improvement of borrowers' institutions and policies - as is strongly implied by the Bank's new program for FY 1974-78 - then the principal need now appears to be for special effort on application of research results already reached (e.g. on system extensions and rural electrification) and on spreading more widely the more systematic approaches already beginning to be applied on topics such as shadow prices and distribution standards. The following proposed actions should help considerably:

1. Prepare a plan for recruitment of power economists after reassessing the Bank's specific needs and possible sources.

2. Make it a standard practice that guidelines and policy advice will only be issued - even on relatively simple topics like efficiency indicators - in conjunction with at least one practical demonstration, for a specific project, by the author of the policy work.

3. Make provision in the EDI budget as soon as possible for introduction of the course already envisaged for senior power utility staff (and perhaps auditors and consultants) on tariff structures, rural electrification, reliability standards, economic justification of power projects, so as to disseminate the valuable work done on those topics in the Bank in the last two years and make borrowers more demanding on their consultants in regard to these matters.

4. Prepare a brief guideline to Bank staff on review of consultant terms of reference for power project feasibility and system planning studies, as an easy reminder of subjects which would normally need to be included, such as responsibility for training in planning, use of shadow prices, systematic treatment of reliability standards and possible alternatives to those proposed.

5. Update the appraisal checklists and appraisal report outlines in respect of (a) company's new connection policies, (b) company's fiscal contribution, (c) generating reserve margin, (d) utility performance indicators.

CONFIDENTIAL

REVISED DRAFT

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

CLOSING REPORT ON ACTIONS RELATING TO RECOMMENDATIONS OF THE ELECTRIC POWER EVALUATION REPORT

December 15, 1974

Operations Evaluation Department

Table of Contents

CLOSING REPORT ON ACTIONS RELATING TO RECOMMENDATIONS OF THE ELECTRIC POWER EVALUATION REPORT

In 1971 the Operations Evaluation unit carried out, as one of its first efforts, a review of Bank operations in the electric power field, mainly on the basis of ex-post assessments, against original objectives, of a large and diversified sample of projects for which the Bank had lent a cumulative total of about $1 billion to ten different power companies -- three in Colombia and one each in Argentina, Brazil, Ethiopia, Ghana, Malaysia, Mexico and Singapore. The results of this study were presented in "Operations Evaluation Report: Electric Power" (IBRD Report No. Z-17) dated April 1972. Bank assistance to the Colombian power sector was also treated somewhat more comprehensively in one chapter of the report "Bank Operations in Colombia: An Evaluation (IBRD Report No. Z-18) which was issued shortly thereafter. Both studies included certain suggestions regarding future Bank activity in the field of electric power which were discussed with the relevant operating departments both before and after presentation of these reports to the Executive Directors and were in the main agreed to be worthy of pursuit.

The purpose of the present document is to report briefly on actions since taken by the Bank that relate to the suggestions made. It is based on a review of relevant research papers and operational guidelines issued by the Bank over the last two years and of appraisal reports for power loans approved in FY 1974; on a series of discussions in July 1974 with all operating units principally responsible for electric power work; on comments received in October and November on the first draft of this report; and on a meeting with relevant Bank managers early in December 1974. After recalling the main conclusions of the evaluation studies and indicating the main lines of recent Bank activity in the field of electric power, this report systematically summarizes each of the original suggestions, the response that the Bank operating departments gave at the time and relevant actions since taken. An overall assessment is given in the concluding paragraphs.

The evaluation studies found that the rapid pace of power system expansion achieved in the developing countries between 1950 and 1970 had depended crucially on Bank financing and concluded that the wider pattern of Bank action had been notably effective in achieving the main preoccupation that the Bank had developed in its work in this field: minimizing long-run (financial) costs of power system expansion by such measures as improvements in sector organization, careful advance investigation and planning to enable selection of the most economic path of system expansion, use of international competitive bidding and assuring adequate cash-flow to the utility to prevent construction interruptions. The Bank had in particular in several instances made significant contributions to institutional rationalization by urging amalgamation of regional power companies, or cooperative arrangements, to permit achievement of scale economies, and its financial covenants, which had become steadily better in form, showed evidence of having been causative factors in the continuous improvement of financial performance demonstrated by most of the companies. Notable internal organizational improvements had also been stimulated by the Bank in several companies, and the two cases among all ten that still showed considerable institutional weakness were ones where, in complex political circumstances, responsibility for power supply

within relatively small areas remained divided. Major cost overruns had occurred on some projects, but generally for reasons that would have been hard to foresee, and in the case of very few plants were they large enough to raise doubts in retrospect as to the economic validity of projects selected. Only in few cases had there been temporary unproductive building ahead of demand, due to faulty planning.

The main theme of the report's suggestions for the future was that the Bank could make an important contribution to further improving its own selection of power projects and the role of its power customers in development by helping them to cope with fundamental questions, essentially related to the links between power supply and development, which it had largely bypassed in the past and on which they not infrequently themselves wanted advice. How quickly should power demand be allowed or encouraged to grow? How much can electricity supply induce development or improvements in efficiency in other sectors (e.g. small industry and agriculture)? How much expenditure should be allocated to electrification of villages or small towns presently unserved, and how should they be selected? How much effort should be devoted to expanding the coverage of the power system as opposed to improving reliability standards on the existing system? What are appropriate risks of load shedding to run under different economic conditions? Under what circumstances is it worthwhile from the socio-economic viewpoint to provide power at less than cost to serve? The report asked the Bank to develop appropriate methods of analysis and project appraisal to help bring answers to these basic dilemmas.

Bank and IDA lending for electric power, after falling sharply in FY 1973, reached a new peak in FY 1974, in excess of $750 million, in real terms 20% above the average annual amount of power lending committed in 1969-73 and envisaged for 1974-78. 1/ The number of projects, at 14, was about the same as the average number approved in each of the previous five years; but three of the loans were in excess of $100 million, including one of $148 million, the largest single project loan ever made by the Bank for the Elbistan lignite-fired thermal plant in Turkey. A somewhat surprising trend, in light of earlier expectations, is a sharp drop over the last year in the share of power distribution in the Bank Group's lending and in the projects supported, as shown by the following table. 2/

1/ Revised IBRD/IDA Program 1974-78 of June 1974.

2/ The table refers only to lending directly for power utilities. In most years there are a few loans/credits for other principal purposes which also include a small power component, generally mainly distribution. But the total amounts involved are not generally very significant compared with the magnitudes given above. For instance, two of the larger provisions of this sort in FY 1974 were US$ 2.4 million (out of a total US$ 25.0 million loan) for a US$ 3.7 million power distribution component of the Korea Kyongju Tourism Project (Ln. 953-KO) and US$ 1.0 million (out of a total US$ 30.0 million loan) for a US$ 2.2 million distribution component of the Greece Nestos and Yannitsa Irrigation Scheme (Ln. 991-GR).

IBRD/IDA Lending for Electric Power FY 1970-74
(current US$ millions)

	1970	1971	1972	1973	1974 a/
Loan/Credit Amounts Approved	556.0	500.9	520.6	321.5	754.8
% for Distribution	20	19	20	14	1
Total Project Costs b/	1512.1	816.1	2425.5	883.1	2958.0
% for Distribution	25	18	19	30	0.5

a/ excluding three small supplementary loans committed under amendments to earlier loan agreements to help cover cost overruns.

b/ excluding interest during construction.

In each of the years 1970-73 two of the loans/credits approved were predominantly or very largely for distribution expansion -- in such countries as Argentina, Brazil, Ghana, Iran, Nigeria and Turkey -- and another four projects included some distribution component. FY 1974 power lending included two projects with a distribution component and in both it was quite small. The first integrated rural development project to have an electric power component 1/ was the Mexico Papaloapan Basin Rural Development Project for which a loan was approved in October 1974; further rural development projects in Mexico are expected to follow suit in this respect.

An important innovation in the Bank's power work, sponsored by the new Public Utilities Department that emerged from the Bank's reorganization in October 1972, is the establishment of regular series of publications of research papers and operational guidelines. Over the last 18 months numerous papers prepared by Bank staff and consultants have been published in this form, ranging from guidelines on technical cooperation with other international agencies to a major review of the changing relevance of nuclear power for developing countries. Some of the research done on electricity pricing and rural electrification is now culminating in an important policy statement on the economic analysis of public utility projects, 2/ carrying the Bank's approach much beyond cost minimization and demonstrating how the incremental return concept that has come into use in the Bank in the last few

1/ The Bank's loan of US$ 50.0 million included a US$ 5.0 million contribution for a US$ 10.0 million rural power distribution component of the project designed to bring grid electricity to 106 villages with nearly 140,000 inhabitants, raising the percent of people in the Papaloapan Basin with electricity connections from about 41% now to 48% on project completion.

2/ Economic Evaluation of Public Utilities Projects (September 30, 1974).

years can become a meaningful tool of economic analysis once the relationship between prices charged for utility services and their marginal costs is established.

1. System Extensions

Original Recommendation: The Bank should expedite work to develop techniques for analyzing the economic validity of extending public power supply to new areas, such as marginal zones of the cities, surrounding villages or small towns or larger regions presently unserved.

Bank Response: The Bank agreed with the need to study this matter on a priority basis and to identify economic and social effects of system extensions to smaller and less dense markets, with a view to finding practical ways to improve cost/benefit techniques and also provide a sounder basis for justifying departures from strict economic/financial pricing policies in order to meet social objectives.

Review of Action: The Bank has carried out, on schedule, a major research study of rural electrification experience in El Salvador and produced a number of internal instructions and papers relating to the economic justification of such schemes.1/ Further field study is underway in connection with a small rural electrification component to a power loan made to Ecuador in February 1972. The major conclusions derived from these studies can be summarized:

a) Rural electrification is best undertaken within the framework of an integrated regional development program, and even in the (usual) absence of such a program it is desirable to move as far as possible to examining the potential in this broad context.

b) Successful village electrification normally requires that the village average per capita income be above a particular "threshold" level (for example, $50-60 in El Salvador in 1972) at which demand begins to develop, but growth in demand can be very rapid and it is essential to focus on the prospects for this.

c) Economic benefits in excess of prices charged for power (mainly increases in production made possible by power supply and savings on alternative fuels) can and should be routinely assessed for productive uses of electricity (such as irrigation, agro/village industries, water supply works).

d) Comparable benefits in excess of prices charged for household consumers (from savings on alternative fuels and greater value of higher-quality energy) are so difficult to estimate soundly at

---

1/ Public Utility Note 6, "The Appraisal of Village Electrification Projects" (August 1, 1973), and IBRD Report No. 517, "Issues in Rural Electrification" (July 24, 1974), distributed under Secretary's Memorandum Sec M 74 636 of September 12, 1974.

reasonable cost and may well normally be sufficiently small that revenue projections may generally be taken as a reasonable indicator of gross benefits of such consumption, implying that electrification for households alone in rural areas is generally unlikely to be economic.

e) It is essential to take a long-run (20-year) rather than a medium-run (5-year) term of analysis due to the importance in the economic analysis of both the prospective growth of demand and of possible scale economies from increasing network utilization.

f) Tariffs may be set below long-run marginal costs during the early years because of the generally high initial investment costs, the need particularly at first to promote the use of the service, or social reasons (to help small business and low-income families), but subsidies (or taxes) should be made explicit and tariffs should within five-ten years aim at reflecting the level and structure of long-run marginal costs of supply in order to secure efficient allocation of resources and to avoid inequities with the much larger number of rural families in most developing countries who remain without electricity (probably still about 75% in the early 1980s).

g) Non-quantifiable benefits in excess of revenues (e.g. educational or other effects on households) may sometimes be sufficiently significant to warrant undertaking a project whose incremental return based on financial returns plus an allowance for productive users' benefits (in excess of prices charged) is slightly below the opportunity cost of capital, but this can only be a matter of judgment.

The results of this research were only put into final form towards the end of FY 1974, and none of the appraisals of projects approved by the Bank and IDA in that year reflect any of this work. However, a preliminary appraisal, giving special attention to economic justification and partially drawing on the Bank's research, has been made of a major rural electrification project (involving much agro-industry) in India. Direct application of research results is underway for a rural electrification project being prepared in Iran. Further projects are under active early consideration for Northeast Brazil, Malaysia, Thailand and Tunisia. Efforts are also planned in 1975 to examine the situation of rural electrification in poorer countries, especially in Africa, to see whether the approaches so far developed can be applied directly or whether further research is required. Bank/IDA financing for several African rural electrification projects is envisaged for later years.

2. New Connection Policies

Original Recommendation: The Bank should try to assess, in the economic evaluation of power projects at both the selection and appraisal stages, whether utility policies regarding the connection of new customers and extension of distribution systems are satisfactory in the sense that they respond to any opportunities that may exist for accomplishing significant

development benefits from spread of electrification -- for example, increasing efficiency of small industry or aiding production and education in rural and marginal urban areas.

Bank Response: The Bank stated that the necessary judgments would be made in the course of appraisal missions and that they would be aided by the results expected from the research discussed under Recommendation 1 which would be disseminated among the staff as and when available.

Review of Action: The Bank's own research and India's experience of rural electrification do indicate that the application of electricity for agricultural and industrial purposes in particular can bring substantial development benefits. However new connection policies do not yet appear to be assessed by appraisal missions for power projects generally, and few appraisal reports have even given a projection of the number of new consumers expected to be connected. This may in part reflect the very low share of distribution in recent power leading and the fact that some loans have been to bulk suppliers, although, from the point of view of project justification and utilization, new connection policies of ultimate retailers would seem to warrant attention, whatever the Bank is directly helping to finance.

Now appraisal reports are beginning to give projections of the number of new consumers expected and appraisal guidelines are being revised to require collection of basic data on new connection policies and charges, at least in cases where this is reasonably easy because the borrower is substantially involved in distribution as well as in generation and transmission; in the case of countries where there are numerous power utilities or where the Bank's main borrower is a bulk generation and transmission company, this work will probably only prove possible in the course of sector studies. Experience in the assessment of these data will have to be developed, but rigorous application of the new approach adopted to economic evaluation of public utility projects, emphasizing the relationship between marginal costs of supply and charges, but also incorporating development benefits, should eventually enable the Bank to advise its borrowers constructively on whether the pace of connection of new consumers should, from the economic point of view, be accelerated or reduced.

Consideration is being given to an effort in FY 1976 to develop Bank familiarity with, and policy on, the special problem of new connection policies in marginal urban areas, where electrification may be very worthwhile economically but unattractive financially due to the difficulty of obtaining adequate customer capital contributions from these typically poor areas and of subsequently charging these tariffs different from those in the rest of the urban area.

3. Self-Help for Distribution Expansion

Original Recommendation: The Bank should encourage country authorities and power companies to find appropriate institutional mechanisms for mobilizing self-help efforts in distribution expansion.

Bank Response: The Bank undertook to be on the lookout for successful experience in this field with a view to incorporating it in projects supported or otherwise propagating it, but it did not think that any general guidelines could be prescribed.

Review of Action: The Bank's rural electrification research touched usefully on the role of cooperatives in rural power supply and pointed out that the labor component of a rural electrification project may constitute up to 25% of total investment costs, so that use of self-help arrangements may make the scarce funds available for rural electrification go further. The Bank is aware of some successful applications of self-help in the power field, both in actual construction of distribution systems (mobilization of community financial contribution and manpower) and, perhaps even more important, in operation, administration and billing. Some examples are Andhra Pradesh, Colombia and Turkey. But no effort yet seems to have been made in operational work to propagate experience.

The Bank has now agreed to try to have operating staff prepare, at convenient moments, brief notes on experiences of this sort for dissemination through the regular information channels established over the last years.

4. Generation and Transmission Reliability Standards

Original Recommendation: The Bank should help develop, and require of utilities and consultants, more systematic procedures for rational determination of reliability standards appropriate to different countries and areas, with a view to eventual presentation in appraisal reports of explicit justification of standards selected.

Bank Response: The Bank indicated its agreement with this general proposal but emphasized the difficulties of estimating the economic costs involved by lowering standards of service. Research and guidelines were intended to lead to appraisal reports explicitly stating the standard of risk of failure to supply implied in project proposals, even if they could not yet assess the economic optimality of this standard.

Review of Action: The related research was cut short by staff shortages, but some useful notes were circulated. 1/ A recent system-planning study for the Comision Federal de Electricidad (CFE) of Mexico, presently under study in the Bank, reviewed the various generation and transmission reliability standards to be retained for large interconnected systems as well as some crucial economic indicators to be considered in the selection of a particular reliability standard. The Bank states that many other borrowers have been increasingly adopting computerized system-planning models which deal explicitly with the probability of load shedding and facilitate consideration

---

1/ Public Utilities Note 3, "Generating Plant Reserve Margins" (June 20, 1973). See also Annex 1 to Public Utilities Research Report 3, "Framework for Electricity Tariff Studies" (March 18, 1974).

of alternative standards of bulk supply reliability.1/ The Bank staff has continued to review these matters in connection with lending operations on the basis of experience and judgment, but it is doubtful whether they are getting more systematic attention than in the past and it cannot be said that appraisal reports yet carry explicit statements of the risk of failure to supply.

Relative neglect of these matters may be justified by the fact that many of the more important Bank borrowers of recent years have been suffering shortages, more or less severe, of generating and bulk transmission capacity and (although this does not generally show in the forecasts beyond a few years out) some may well be expected to continue to do so, with the new prospects, especially in some cases, of more rapid growth of demand for electricity, following the increase of oil prices, and higher costs to meet it. Yet there seems to be general agreement on the importance of this subject and the worth of trying to give it more systematic attention. The Mexican study, referred to above, is being summarized for circulation, and appraisal guidelines are being revised to refer more fully to the problem. The difficulty is always in estimating the costs to the economy of any particular lowering of standards; the corresponding savings in power system costs are not difficult to calculate. Even with this difficulty, the Bank has suggested 2/ that estimates be made, for consideration in connection with tariffs at system peak, the adequacy of load-shedding arrangements and the general circumstances of the country, of

> (a) the savings in system costs that would result from adoption of the next lower standard of bulk supply reliability than the one proposed,

and

> (b) the corresponding amounts (or additional amounts) of load shedding that might be required if this lower standard were applied.

It would seem, in light of the importance of the subject and its significance in any investment planning, that appraisal reports should indeed give an explicit statement of "the risk of failure to supply implied in project proposals", citing the reserve criterion used in planning, and translating this into a probability distribution for different amounts/durations of load shedding for the particular system in question; with the apparent wide spread of system planning models now, this should not be difficult, it would present information in a form directly comparable among countries and projects, and

---

1/ The Bank is considering propagation of one such model itself. See below, Section 11.

2/

and its systematic use would soon lead to a better understanding of the matter and, probably, better planning, more adjusted to the economic circumstances of different countries.

5. Distribution Reliability Standards

Original Recommendation: Distribution standards should be subjected to the same treatment as mentioned above for Generation and Transmission, and the Bank should encourage borrowers to carry out systematic studies to optimize distribution standards to local conditions.

Bank Response: The Bank expressed general agreement with these propositions and, emphasizing again some of the technical difficulties involved, referred to planned research to be undertaken.

Review of Action: A useful note has been prepared on the aspects that need to be examined by appraisal and other technical missions,1/ and most of the planned research (particularly covering European practices) has been carried out. An optimization study, of approximately the nature suggested in the evaluation report, was called for by the Bank in connection with the April 1973 loan for the Istanbul Distribution project.

The work so far done in or for the Bank suggests that there may be significant scope for saving on costs simply to reach presently intended standards in many developing countries, by improvements in system and plant design; further savings should be possible by lowering the planning standard. There is considerable interest in this subject within the Bank. It is envisaged that some specific studies may be undertaken by Bank staff to seek scope for reducing the cost of distribution, particularly on East African review partly stimulated by concern about the possibility of distribution standards presently being excessive in Zaire. A consultant study focussing on this aspect has been underway in Ghana, at the initiative of the Ghanaian authorities, with a view to preparing a project for submission to the Bank. The Bank's Research Committee has just authorized an extension of the general research so far done to include two case studies and the preparation of guidelines to judge the adequacy of distribution plans and the benefits of alternative standards.

6. Urban Context

Original Recommendation: Appraisal and sector reports could usefully consider power in its urban context and treat explicitly the question of balance between power and other services and facilities in terms of the quantity and quality of their supply.

1/ Public Utilities Note 4, "Standards of Urban Electricity Distribution", (June 28, 1973).

Bank Response: The Bank took the view that appraisal teams had neither the opportunity nor the ability to make judgments about the adequacy and quality of other services compared with power and that anyway these were not in practice very serious issues, except possibly in rare instances in which case they would be given special treatment -- as was being done at the time in a particularly intensive effort on Istanbul, involving several loans for different services and numerous studies. Normally, it was felt, these issues would be treated in the Bank's operations at the time of developing the country lending program and in discussions with Governments as to appropriate projects for Bank consideration.

Review of Action: Several cases of imbalance of urban services, with power being consistently more plentiful and better in quality than other services (particularly water), without any clear economic justification, have been encountered by the Operations Evaluation Department in its work on completed Bank-assisted projects. It does seem that a problem has existed, at least in the past, and there is no reason to suppose it does not continue. But there is no easy solution, and the evaluation report recommendation was probably oversimplified. Appraisal is really too late a stage for the subject to be most usefully considered. More fundamentally, while the "consumer's view" is very important, it requires sectoral specialists to develop and cost means of improving the different services to different standards, and no satisfactory way has yet been found of calculating cost-benefit ratios or economic returns fully comparable between sectors. Perhaps the best that can be said is that Bank program officers should be aware that this problem has arisen in the past and they should try to delve into it a little at the earliest stage of project consideration by appropriate enquiries about the relative availability and coverage of different services and plans for their expansion.

7. Tariff Structures

Original Recommendation: The Bank should further increase the attention given in recent years to tariff structures, systematically analyzing wherever possible the extent to which tariffs charged to different consumer groups reflect social marginal costs so that deviations may be explicitly justified in terms of (a) effective means of taxation of inelastic consumers, (b) subsidies warranted to induce consumption because of resultant economic benefits or (c) price distortions elsewhere in the economy.

Bank Response: The Bank accepted this recommendation and planned research, case studies and production of appropriate guidelines, but it stressed, as an obstacle to progress the shortage of qualified people in the Bank and in borrowing institutions to work on these problems.

Review of Action: With the aid of consultants the Bank has produced research papers 1/ of particularly high quality in this area,

---

1/ Principally, Public Utilities Research Paper 1, "Economic Analysis of Electricity Pricing Policies: An Introduction" (January 9, 1974) and Research Paper 3, "Framework for Electricity Tariff Studies" (March 18, 1974).

undertaken case studies (in Sudan and Tunisia) and prepared the guidelines envisaged.1/ The specific points raised in the evaluation report recommendation now appear to be very generally accepted. Virtually all appraisals of power projects now include some treatment of the borrower's tariff structure, and the Bank has increasingly raised questions about major deviations between charges to particular consumer groups and the costs to supply them, and itself studied them in detail or called for their review by consultants and borrowers (for instance in Burma, Sudan, Malawi, Syria, Turkey, Algeria, Iceland, in recent years). Actual adjustment of borrower tariffs in light of the Bank's new emphases in this regard appears to be still in the future, but it is, for instance, very much under discussion in the case of Tunisia. The Bank's analysis will be further deepened as the research results are fully applied and as the new approach to economic evaluation of utility projects mentioned earlier comes into general use. The main constraint to more frequent analysis of tariff structures against marginal costs appears to have been the shortage of appropriate Bank and consultant staff.

8. Shadow Prices

Original Recommendation: Shadow prices should be used in the economic analysis of project validity in all appropriate circumstances, and they may be reflected if necessary in utility tariffs.

Bank Response: The Bank agreed that ideally shadow prices should be used in benefit/cost analysis, project selection, design, and construction and in the setting of tariffs, although in practice at the time their use was largely confined to a few cases of project selection and to the calculations of internal economic rates of return (based on adjusted financial data) and their use in design and bidding would be difficult in reality.

Review of Action: Guidelines since prepared on analysis of rural electrification schemes and of tariff structures and on economic evaluation of utility projects do recommend that shadow prices for foreign exchange, labor and capital be used, whenever appropriate, in benefit-cost analysis, project selection, marginal cost pricing and internal economic return calculations. Actually there has been a widespread recognition of their usefulness; shadow prices have been used mainly in the selection of least-cost alternatives (Nigeria, Gabon, Morocco and Iceland), in a few instances in economic return calculations (Turkey, Algeria), but seldom in marginal cost and tariff reviews (Burma only); the two tariff structure case studies (Tunisia and Sudan) did not use shadow prices despite their seeming relevance to these countries -- apparently because of difficulty in obtaining suggested values from the Bank's country specialists. Finally, shadow prices have not been included in the documentation provided to consultants responsible for early selection and design of projects considered for Bank financing.

1/ Public Utility Note 5, "Pricing in Power and Water Supply" (July 1973).

Shadow prices may actually be of greatest practical significance in the electric field in tariff studies, where failure to use them whenever appropriate could lead to wrong recommendations in view of the particularly heavy foreign exchange component of electricity costs in many countries. Hence they will become more important as the Bank increases its work on power tariffs. The principle now seems to be firmer help from country specialists in the choice of appropriate values. This problem should be eased with the decision recently made by the Bank to undertake a special effort on the generation and application of appropriate shadow prices for selected countries in each region, as a preliminary step to generalized use of these concepts.

9. Fiscal Contribution of Power Companies

Original Recommendation: Examining the power company from the point of view of the contribution it can make to development, it might be useful to include regularly in appraisal reports a paragraph or two about fiscal aspects of the company's operations, in view of their importance in connection with tariffs, procurement, the financing of investment, maintenance of sound balance among utility services and Government revenue needs; borrowers studied show a very wide diversity of performance in this respect.

Bank Response: Stressing that all flows between Government and power company, as well as internal cash generation substituting for Government capital contributions, should and could quite easily be considered in assessment of the fiscal effects of borrowers' operations, the Bank planned to prepare instructions on this subject.

Review of Action: Fiscal aspects were referred to, and proposed for review by operational missions, in the previously mentioned Public Utility Note 5 issued in 1973, but shortage of staff led to postponement of the planned revision of the appraisal checklist in which this matter was to be incorporated, and recent appraisal reports on power projects have not included the proposed special paragraph -- although there appears to be a large amount of agreement that this would be quite feasible and useful, and telecommunication project appraisal reports have begun to include such a discussion. The Bank has continued to intervene on this matter, in some cases suggesting payment of taxes or dividends by the utilities to Government (e.g. Ethiopia and Ghana) and in others recommending or accepting exemption from such payments as a means to improve company profitability (e.g. Philippines and Iceland). More general draft instructions, of more elaborate nature, have recently been prepared for the handling of this aspect in all projects, not only those in power.1/ It remains true that a good starting point, not difficult, would be a simple presentation in appraisal reports of the various aggregate flows (or substitutes of flows) between Government and power company, perhaps with some comparative figures from other power companies or other sectors in the same country; some consideration might also have to be given to internalized transfers, e.g. out of revenues from existing urban consumers to finance investment in rural connections, a financing form favored in the Bank's report on Rural Electrification.

1/ "Pricing and Cost Recovery of Public Sector Projects", July 1974.

The Bank states that short guidelines on analysis of power companies' fiscal contribution are now nearing completion and that the appraisal checklist is being revised to include a reminder on this subject.

10. Utility Performance Indicators

Original Recommendation: The Bank should give more systematic attention to technical and financial indicators of utility performance other than the overall rate of return on assets, and include in appraisal reports simple tables showing the trends of selected indicators over past years; in the case of serious problems, performance targets for the future could be agreed upon during loan negotiations (along with specific steps or studies to attain them) and regularly checked by project supervision missions.

Bank Response: The Bank agreed that there were large potential benefits to be obtained from more systematic use of technical and financial performance indicators although at that time it seemed to think of them more for purposes of broad comparison between countries, to understand better existing situations, rather than as bases for targetting improvements.

Review of Action: Instructions for the systematic use of such indicators in appraisal reports, calling for presentation of target values, were issued in final form in November 1973.1/ Of the projects for which loans were made in Fy 1974, many had been appraised by that time and the appraisal report only for one (in Algeria) seriously followed the instructions, perhaps too comprehensively -- insofar as past values are given for 108 different items, but no targets or projected values are shown. In another, earlier case an elaborate "Plan of Action" was developed for the improvement of a borrowing utility in particular difficulties (PLN in Indonesia: Credit 399-IND of May 1973) and was presented in the appraisal report; in response to the Executive Directors' request during discussion of the proposed credit a progress report after one year was recently circulated to the Directors. The "Plan of Action" gave time targets with regard to completion of certain steps and studies, but no numerical specifications of the overall improvements in performance (except for the operating ratio) that were expected to result.

There appears to be unanimous agreement in principle that greater use of efficiency indicators and targets would be useful in Bank power operations, and a growing convergence of view that informal agreement with the borrower at the time of loan negotiations on target values for a few (say 10-15) indicators is worthwhile even when there are not serious problems. Future appraisal reports may be expected normally to contain such performance indicators.

11. Power Planning Visits

Original Recommendation: The Bank should give more attention in sector and appraisal missions and institution-building efforts to the functional adequacy of utility and national power planning units.

1/ Public Utility Guidelines 3, "Guidelines for Project Monitoring System for Public Utilities Projects" (November 8, 1973).

Bank Response: Pointing out that planning units needed to be examined for the adequacy of their staff, their techniques and their influence, the Bank agreed that this was an area requiring consistent priority. Guidelines emphasizing these points were to be prepared.

Review of Action: In the event it was decided not to prepare full guidelines specifically on this subject but to include coverage of it in the Guidelines for Power Sector Studies.1/ Appraisal and sector missions have normally given attention to the planning units, but their weaknesses are seldom subject to quick solution, although the possibility of major progress is illustrated by the number of companies which have moved over time from heavy reliance on consultants to doing almost all their own planning except of a most specialized type (e.g. in Thailand, Ghana, Tunisia, Algeria and Morocco).

The Bank is constantly on the lookout for opportunities to help strengthen local planning units -- checking consultant terms of reference for feasibility studies to see that they include training wherever suitable counterparts are available, intending to adapt an optimal generation expansion planning program developed for IAEA 2/ to use by borrowers, including funds in loans for development of planning units wherever appropriate and now, for instance, actively considering a project in Liberia largely oriented to this specific purpose.

12. Training

Original Recommendation: The Bank should systematically consider the needs for training and opportunities for promoting and assisting it, in project appraisals and reviews of consultant terms of reference.

Bank Response: This point was agreed to by the Bank, and covered by the Bank's general guidelines and memoranda on training in Bank/IDA projects.

Review of Action: Indeed, training has received in recent projects frequent and full attention, and substantial Bank funds in some cases (Indonesia, Papua and New Guinea). Preparation of notes to help missions better assess the adequacy, efficiency and economy of training programs is envisaged.

1/ Public Utility Guidelines 5, of November 20, 1973.

2/ International Atomic Energy Authority: the Wien Automatic System Planning Package (WASP).

13. Financial Recording and Planning

Original Recommendation: Despite improvements achieved there remain weaknesses in borrowers' accounting systems and procedures, particularly with regard to cash flow planning, which need additional emphasis.

Bank Response: The Bank stressed the time required to install effectively improvements in accounting systems and financial planning techniques, and it suggested that the problem might be less in diagnosis than in follow-up on improvements proposed or agreed. To facilitate work it envisaged the preparation of standard financial annex formats for appraisal reports and more supervision effort in this field.

Review of Action: The standard financial formats have not yet been agreed, but project supervision in this area has continued to receive emphasis, especially in cases where particular problems are encountered as, for instance, Iran recently. In some cases there may be opportunity for economizing Bank staff resources by greater contact with, and reliance on, borrowers' auditors,1/ but the scope for this is severely limited by the scarcity of good auditors. As regards cash flow planning, preparation of a periodically revised forecast is generally included in regular borrower reporting requirements under Bank lending, but the assistance of a supervision mission is quite often required to help produce it.

14. World Trends in Power Financing

Original Recommendation: In view of the importance of electric power in development investment and in developing countries' foreign debt and of the past predominance of the Bank in this field and its desire to diversity its lending increasingly, the Bank should consider undertaking a systematic review of worldwide trends in capital requirements for power in the developing countries and of prospects for financing from other sources, to provide a perspective which would complement country and sector considerations in planning power lending.

Bank Response: The Bank agreed with this suggestion in principle but pointed out that staff constraints would not permit investing in the subject the fairly significant amount of staff time that would be necessary.

Review of Action: In assessing the impact of the energy crisis on its member countries the Bank has in fact done some work on this subject at the global level 2/ and it has produced a paper adducing some of the general

---

1/ The Bank did recently issue a useful note on financial auditing: Public Utility Guidelines 9, "Illustrative Audit Report for a Power Company" (November 15, 1974).

2/ IBRD Report No. 477, "Prospects for the Developing Countries" (July 8, 1974).

considerations relevant to estimation of future requirements for investment in electric power.1/ Insofar as the recent changes in relative fuel prices tend to make electric power a relatively more attractive form of energy, in several important respects, than previously, although generating plants of higher capital cost are likely to have to be built increasingly, capital requirements for electric power, which have long accounted for a remarkably large part of loan financing between countries and internationally 2/, may now become even more important. However, as mentioned, the Bank's own plans foresee lending for power in FY 1974-78 only about the same amount in real terms as in FY 1969-73 (about $3,100 million in FY 1974 prices); such lending would constitute 12% of all IBRD/IDA lending in the forthcoming period, compared with 18% in FY 1969-73. To deepen understanding of the feasibility and implications of this divergence in trends and to help effective implementation of the Bank's policy and program, renewed thought is being given to a more detailed investigation along the lines suggested in the evaluation report.

15. Sales of Participations in Bank Loans

Original Recommendation: If a situation recurs such as that in 1967-68 when the Bank desired to use Joint Financing to make up for shortages in the funds it could lend, in total or to particular countries, then serious consideration should be given to making arrangements with supplier countries whereby funds available for export financing might be used to buy participations in Bank loans in amounts directly related to contracts won by their nationals.

Bank Response and Action: Although consideration was given to financial arrangements of this sort in connection with one loan, the point has not been of general relevance in the last few years insofar as the Bank has not had difficulty in raising funds directly. Sales of participations, which enjoy the advantage of considerable administrative simplicity compared with most joint financing arrangements, may possibly become relevant as one channel for applying the surpluses of oil-exporting countries to development.

16. Follow-up Evaluation Studies

Original Recommendation: Analysis of the Bank's financing of local procurement of electrical equipment and of the contribution such financing has made to the growth of efficient domestic equipment industry

---

1/ IBRD Report No. 477, Background Paper V, "Sectoral Adjustment to Higher Energy Costs" (July 8, 1974).

2/ See original evaluation report, IBRD Report No. Z-17, "Operations Evaluation Report: Electric Power".

would be useful for future policy. Second, a more thorough study of the economic validity of the Volta River Project in Ghana might be worthwhile.

Review of Action: The Operations Evaluation Department has not had the time to pursue either of these studies to date. Doubts about the aspects of the Volta River Project questioned in the evaluation have remained and perhaps deepened, but in connection with new projects the Bank is now giving considerable attention to possible resettlement problems, ecological side effects and contractual terms between local authorities and international mineral concerns, so that further study of the Volta project might make only a limited contribution to strengthening Bank policy. The review of actual experience with the financing of local procurement would still seem worthwhile for execution as soon as the resources of the Operations Evaluation Department permit.

17. Central Power Institutions

Original Recommendation: The Bank should, wherever circumstances in a country permit, encourage development of a strong central institution in the power sector through which it might later channel lending in a sector program manner (as in the last few years with CFE in Mexico). Experience suggests that such an institution (not necessarily implying regional interconnections) is essential in order to develop (a) sound and well-coordinated investment planning, (b) balanced plan implementation among regions, and (c) effective and economical use of other sources of foreign financing such as supplier credits.

Bank Response: The Bank was generally in agreement with this recommendation, very much in line with, and indeed drawing on, its own successful experience in earlier years in this field.

Review of Action: The Bank has continued to try to reinforce established institutions of this type (e.g. in Brazil), to assist the development of newly created ones (e.g. in Indonesia, Nigeria, Turkey and Zambia), and to encourage their emergence in other countries (e.g. India, Yugoslavia, Cameroon and Morocco). Relevant studies are being started, wholly or partly at Bank request, in Colombia and Iceland. Probably the suggested sector-lending approach, excluding detailed Bank appraisal of project components and therefore more economical in staff time on these aspects, could be applied more widely in countries where basically satisfactory control institutions of the type described have now been in existence for a number of years; a credit now envisaged for rural electrification in India would necessarily be of this type, although any potential staff time savings have in this case been more than taken up by sectoral issues and the problems of establishing a relationship with a beneficiary agency new to the Bank Group. The practical relevance of a time-saving sector-lending course depends in part on the amount of financial resources the Bank is prepared to put into power lending (see discussion under point 14 above) because the smaller it is the better it may be to ration it around in such a way as to carry a maximum of "technical assistance" from the Bank Group.

18. Unified Jurisdiction of Local Power Companies

Original Recommendation: Experience suggests that the Bank can make a major contribution by insisting on unified control of generation, transmission and particularly distribution in urban regions.

Bank Response: The Bank agreed that this point was relevant in certain circumstances.

Review of Action: While the Bank has made very useful contributions in this direction in earlier years the need for this emphasis is becoming rarer now with the rationalization already accomplished in many cities and regions and with the growth of national bulk supply agencies assuring generation and transmission. One case where the Bank has been trying to help resolve problems of divided jurisdiction in a relatively small area has been Istanbul, in connection with a loan approved in the first half of 1973.

19. Institution-Building Delays

Original Recommendation: Examination of cases where the Bank held up lending pending fulfillment by the prospective borrower of certain institutional conditions shows that the Bank has sometimes made major contributions to institutional strengthening in this way but more instances where it is doubtful whether the delays were really worthwhile, partly because they proved costly and partly because of doubt either as to whether the objective sought was important enough to warrant this cost or as to how effective the Bank action was in causing the change that finally came. The value of withholding loans has to be treated on a pragmatic case-by-case basis, bearing in mind costs and potential benefits of delays as foreseeable at the moment of decision; general rules cannot be established.

Review of Action: Delays in power lending appear to have been fairly limited in the past two years and sound assessment of the delays that have occurred -- principally on the loan for the Elbistan power plant in Turkey and on a planned loan for power development in Sudan -- would require more study than is possible here. There may still be room for more frequent and systematic consideration, when delays are in prospect, of how long a delay (with its consequent costs, for instance of power shortage or higher-cost generation) may be warranted in the interests of any proposed precondition to lending.

20. Construction Cost Estimates

Original Recommendation: The rather frequent recurrence of substantial cost overruns on projects studied, especially in some countries, suggests that somewhat more use may be worthwhile of the

specialized consultant firms that the Bank has sometimes hired in recent years to check project cost estimates, especially for major civil engineering works.

Bank Response: The Bank agreed with this recommendation, for appropriate circumstances, and planned in particular a paper on cost overruns on projects involving substantial tunnelling which would contain specific guidelines in this respect.

Review of Action: The paper was produced 1/ and, more generally, there now appears to be a wide awareness in the Bank of the advantage in some cases of having detailed revisions of cost estimates by specialized consultants. This fairly expensive technique has actually been applied only to one project approved over the last year -- the Kafue project in Zambia -- for which it appears at present that the original estimates and those of the specialist consultant (which were actually lower) were about equally close to the final bids received. An individual specialist was also hired by the Bank to check the cost estimates on the mining part of the Elbistan project. Although cost overruns have been a major problem on some projects currently underway with Bank support, this has been mainly due to general cost-inflation and it does not seem that greater recourse should have been had for projects approved in FY 1974 to specialist consultants of the type described.

Conclusions

Judged against the conclusions of the evaluation report the Bank, over the last two years, has accomplished a large amount of useful and appropriate work in research and preparation of policy papers and guidelines. Priorities seem generally to have been correct. What now appear to have been the more important suggestions -- for instance with regard to the economics of system extensions, tariff structures and distribution standards -- have, for the most part, received considerable attention, while matters with more limited practical significance and relevance in the recent period -- such as the issue of planning standards for bulk supply reliability and the suggested study of world trends in financing for power -- received much less effort. The Bank is undoubtedly closer now than it was two years ago to being able to assist its borrowers with finding solutions to the major dilemmas mentioned at the outset to this paper. Serious application of the new proposals with regard to methods of economic justification of public utility projects will cause several of these issues eventually to be dealt with on a routine basis.

Despite these good research results, the actual operational effect of the evaluation report's principal suggestions must be considered to have been quite limited to date, whether in respect of application of research

---

1/ Public Utility Guidelines 6, "Guidelines for Estimating Costs of Tunnel Construction," (January 17, 1974).

results (as for system extensions and new connection policies) or in respect of implementation of the few direct improvements proposed (such as wide use of efficiency indicators and targets, and standard discussion of fiscal aspects of power borrowers' operations). Only with regard to the recommendations on tariff structures, use of shadow prices and distribution standards, among the evaluation report's economic suggestions, has any broad pattern of relevant operational activity begun to be visible.

The main reason for this apparent gap between principles and practice seems to be inevitable time lag, especially in view of the rather undeveloped nature of many of the original recommendations themselves, somewhat exacerbated by a shortage of economists in the relevant period to work on operational application of the ideas emerging from research. Most of the projects approved for Bank/IDA support in FY 1974 were appraised 9-18 months after the original Evaluation report was issued in final form, but its appearance had first to be followed by discussion of the validity and significance of its recommendations and then by continuation or commencement of work to produce the needed research or, even in the case of the relatively simple "directly applicable" suggestions, more elaborated instructions. As regards the projects, they may have been appraised well after the report's appearance, but initial work on them by the Bank or consultants, even more by the borrowers, would have started several years before -- and some of the points raised in the evaluation report really need to come into consideration at those earlier stages of project preparation if they are to be very useful. So, in one sense, it is too early to have expected readily visible widespread reflection of the evaluation report's concerns in actual lending operations; changes over the last six months alone show that the situation is very much evolving.

Another important factor, especially in the most recent period -- the second half of FY 1974 -- has undoubtedly been the shortage of economists in the Bank to work on power projects and the partial diversion of effort that became necessary late in 1973 to assess the implications for borrowing countries of the drastic changes in oil prices that then occurred. Review of the staff situation suggests that the economic man-years effectively devoted to direct operational work in electric power in fact fell from about three in FY 1972 to only about two in FY 1974, partly for shortage of staff and partly because what public utility economists are available in several Regions have tended to be used primarily for work on water supply. As of July 1974 as many as half of the six economist positions that could have been considered to be principally for power work (including research) were vacant. Several departments seem to have found it very difficult to recruit people with the competence and experience to work on electric power economics. As regards the "energy crisis", it did undoubtedly hamper the transposition of research results into practical guidelines, effective review of power appraisal reports from the economic point of view and, most important of all, demonstration in the field of the methods and procedures proposed.

As of the end of 1974 the staffing situation seems to have improved, so far more by reduction of the work pressures brought by the

initial impact of the "energy crisis" than by recruitment of additional economists insofar as two Regional economist positions remain vacant (one tentatively committed). But even when power economics gets its full planned complement of about seven man-years under present budgetary ceilings, and taking account also of the quite tight budgetary limits on engineers and financial analysts, resources will not permit to apply across the board all the innovations and new emphases developed. Nor should they. To get a good allocation of the resources that are available the departments responsible are developing a system for early identification of the key qualitative objectives of lending operations in power. For this to work effectively as a means for applying and spreading the knowledge that the Bank has accumulated in areas that were identified in the evaluation report as of special importance for development, it will be essential to identify prospective power lending operations early, rather than, as occasionally happens now, to bring them in to fill a gap in a country lending program.

Qualitative objectives must be determined mainly by the needs of the borrowing utility and, to a small extent, by the Bank's comparative advantages within the field of power. But as the only part of the United Nations significantly involved in electric power, the Bank has also somewhat of a special and broad responsibility. Our impression remains that the greatest general need of the borrowers, additional to those which the Bank has long been trying to meet, is still on the side of distribution economics, so stressed in the principal recommendations of the Evaluation Report, and tariff structures -- which does not necessarily mean to say that the Bank should swing its lending heavily toward distribution, although it certainly seems likely that the share of distribution in Bank lending and Bank-supported projects may rise to higher proportions than attained in the early 1970s, but it does mean that an ability to provide convincing technical advice in these fields will be very important. In the last two years the Bank has made important advances on the economics of rural electrification and it needs to complement these with further exploration of related issues, like self-help organization, capital contributions, and distribution standards, and, particularly, to apply and test in practice the research results already reached. Excellent means, additional to lending operations, and complementary to them, to make the most of the experience gained should be to introduce an EDI course in electric power, as is now firmly planned for FY 1976, and to organize periodic seminars of senior power officials in member countries, as is now intended; these seem particularly appropriate functions for the Bank Group given its unique position in the U.N. system in the power field.

Table ?

To: Mr. W.C. Baum and Regional Vice-Presidents

From: C. R. Willoughby, Director, Operations Evaluation Department

Subject: Closing Report on Power Evaluation Recommendations

I am attaching for your review a revised draft of the so-called 'Closing Report' that we owe to the Executive Directors finishing up our work relative to the 'Operations Evaluation Report: Electric Power' that was sent to them in April 1972. This one is supposed to be in a slightly more advanced state than the one based on the evaluation of Bank operations in Colombia that I sent you in November insofar as exchanges with the relevant operating units over the last few months should have already resolved most significant differences of view (except possibly on point 4).

We would much appreciate any comments you would care to send before January 15 1975.

cc. Mrs. Knapp
Shoaib
Rovani
Sheehan
Beach
CR Dickenson
Fish
Morse
Ribi
Warford
Friedmann

(please type this for signature)

CONFIDENTIAL
REVISED DRAFT
~~D R A F T~~

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

CLOSING REPORT ON ACTIONS RELATING TO RECOMMENDATIONS OF THE ELECTRIC POWER EVALUATION REPORT

December 15 1974
~~September , 1974~~

Operations Evaluation Department

Table of Contents

(Please insert correct page numbers after single-space typing)

CLOSING REPORT ON ACTIONS RELATING TO RECOMMENDATIONS OF THE ELECTRIC POWER EVALUATION REPORT

In 1971 the Operations Evaluation unit carried out, as one of its first efforts, a review of Bank operations in the electric power field, mainly on the basis of ex-post assessments, against original objectives, of a large and diversified sample of projects for which the Bank had lent a cumulative total of about $1 billion to ten different power companies - three in Colombia and one each in Argentina, Brazil, Ethiopia, Ghana, Malaysia, Mexico and Singapore. The results of this study were presented in "Operations Evaluation Report: Electric Power" (IBRD Report No. Z-17) dated April 1972. Bank assistance to the Colombian power sector was also treated somewhat more comprehensively in one chapter of the report "Bank Operations in Colombia: An Evaluation" (IBRD Report No. Z-18) which was issued shortly thereafter. Both studies included certain suggestions regarding future Bank activity in the field of electric power which were discussed with the relevant operating departments both before and after presentation of these reports to the Executive Directors and were in the main agreed to be worthy of pursuit.

The purpose of the present document is to report briefly on actions since taken by the Bank that relate to the suggestions made. It is based on a review of relevant research papers and operational guidelines issued by the Bank over the last two years and of appraisal reports for power loans approved in FY 1974; ~~as well as~~ on a series of discussions in July 1974 with all operating units principally responsible for electric power work; ~~After~~ recalling the main conclusions of the evaluation studies and indicating the main lines of recent Bank activity in the field of electric power, this

on comments received in October and November on the first draft of this report; and on a meeting with relevant Bank managers early in December 1974. After

report systematically summarizes each of the original suggestions, the response that the Bank operating departments gave at the time and relevant actions since taken. An overall assessment, and summary of points that, in the opinion of the Operations Evaluation Department, require further attention, is given in the concluding paragraphs.

The evaluation studies found that the rapid pace of power system expansion achieved in the developing countries between 1950 and 1970 had depended crucially on Bank financing and concluded that the wider pattern of Bank action had been notably effective in achieving the main preoccupation that the Bank had developed in its work in this field: minimizing long-run (financial) costs of power system expansion by such measures as improvements in sector organization, careful advance investigation and planning to enable selection of the most economic path of system expansion, use of international competitive bidding and assuring adequate cash-flow to the utility to prevent construction interruptions. The Bank had in particular in several instances made significant contributions to institutional rationalization by urging amalgamation of regional power companies, or cooperative arrangements, to permit achievement of scale economies, and its financial covenants, which had steadily improved in form, showed evidence of having been causative factors in the steady improvement of financial performance demonstrated by most of the companies. Notable internal organizational improvements had also been stimulated by the Bank in several companies, and the two cases among all ten that still showed considerable institutional weakness were ones where, in complex political circumstances, responsibility for power supply within relatively small areas remained divided. Major cost overruns had occurred on some projects, but generally for reasons that would have been

hard to foresee, and in the case of very few plants were they large enough to raise doubts in retrospect as to the economic validity of projects selected. Only in few cases had there been temporary unproductive building ahead of demand, due to faulty planning.

The main theme of the report's suggestions for the future was that the Bank could make an important contribution to further improving its own selection of power projects and the role of its power customers in development by helping them to cope with fundamental questions, essentially related to the links between power supply and development, which it had largely bypassed in the past (and on which they not infrequently themselves wanted advice.) How quickly should power demand be allowed or encouraged to grow? How much can electricity supply induce development or improvements in efficiency in other sectors (e.g. small industry and agriculture)? How much expenditure should be allocated to electrification of villages or small towns presently unserved, and how should they be selected? How much effort should be devoted to expanding the coverage of the power system as opposed to improving reliability standards on the existing system? What are appropriate risks of load shedding to run under different economic conditions? Under what circumstances is it worthwhile from the socio-economic viewpoint to provide power at less than cost to serve? The report asked the Bank to develop appropriate methods of analysis and project appraisal to help bring answers to these basic dilemmas.

Bank and IDA lending for electric power, after falling sharply in FY 1973, reached a new peak in FY 1974, in excess of $750 million, in real terms 20% above the average annual amount of power lending committed in 1969-73 and envisaged for 1974-78.[1/] The number of projects, at 14, was about the same as the

1/ Revised IBRD/IDA Program 1974-78 of June 1974.

average number approved in each of the previous five years; but three of the loans were in excess of $100 million, including one of $148 million, the largest single project loan ever made by the Bank for the Elbistan lignite-fired thermal plant in Turkey. A somewhat surprising trend, in light of earlier expectations, is a sharp drop over the last year in the share of power distribution in the Bank Group's lending and in the projects supported, as shown by the following table.[1]

IBRD/IDA Lending for Electric Power FY 1970-74
(current US $ millions)

	1970	1971	1972	1973	1974[a]
Loan/Credit Amounts Approved	556.0	500.9	520.6	321.5	754.8
% for Distribution	20	19	20	14	1
Total Project Costs[b]	1512.1	816.1	2425.5	883.1	2958.0
% for Distribution	25	18	19	30	0.5

a/ excluding three small supplementary loans committed under amendments to earlier loan agreements to help cover cost overruns.

b/ excluding interest during construction.

In each of the years 1970-73 two of the loans/credits approved were predominantly (or very largely) for distribution expansion - in such countries as Argentina, Brazil, Ghana, Iran, Nigeria and Turkey - and another four projects included some distribution component. FY 1974 power lending included only two projects with a distribution component and in both it was quite small. No integrated rural development project approved to date has had an electric power component, but one under preparation for Mexico may be the first to do so.[2] The first to have an electric power component was the Mexico Papaloapan Basin Rural Development Project for which a loan was approved in October 1974; further rural development projects in Mexico are expected to follow suit in this respect.

An important innovation in the Bank's power work, sponsored by the new Public Utilities Department that emerged from the Bank's reorganization

1) The table refers only to lending directly for power utilities. In most years there are a few loans/credits for other principal purposes which also include a small power component, generally mainly distribution. But the total amounts involved are not generally very significant compared with the magnitudes given above. For instance two of the larger provisions of this sort in FY 1974 were US$ 2.4 million (out of a total US$ 25.0 million loan) for a US$ 3.7 million

Footnote 2/ p. 4 contd.

power distribution component of the Korea Kyongju Tourism Project (Ln. 953-Ko) and US$ 1.0 million (out of a total US$ 30.0 million loan) for a US$ 2.2 million distribution component of the Greece Nestos and Yannitsa Irrigation Scheme (Ln. 991-GR).

2/ The Bank's loan of US$ 50.0 million included a US$ 5.0 million contribution for a US$ 10.0 million rural power distribution component of the project designed to bring grid electricity to 106 villages with nearly 140,000 inhabitants, raising the percent of people in the Pampanga Basin with electricity connections from about 41% now to 48% on project completion.

in October 1972, is the establishment of regular series of publications of research papers and operational guidelines. Over the last eighteen months numerous papers prepared by Bank staff and consultants have been published in this form, ranging from guidelines on technical cooperation with other international agencies to a major review of the changing relevance of nuclear power for developing countries. Some of the research done on electricity pricing and rural electrification is now culminating in an important policy statement on the economic analysis of public utility projects,[1] carrying the Bank's approach much beyond cost minimization and demonstrating how the incremental return concept that has come into use in the Bank in the last few years can become a meaningful tool of economic analysis once the relationship between prices charged for utility services and their marginal costs is established.

1. System Extensions

Original Recommendation: The Bank should expedite work to develop techniques for analyzing ~~The Bank should expedite work to develop techniques for analyzing~~ the economic validity of extending public power supply to new areas, such as marginal zones of the cities, surrounding villages or small towns or larger regions presently unserved.

Bank Response: The Bank agreed with the need to study this matter on a priority ~~The Bank agreed with the need to study this matter on a priority~~ basis and to identify economic and social effects of system extensions to smaller and less dense markets, with a view to finding practical ways to improve cost/benefit techniques and also provide a sounder basis for justifying departures from strict economic/financial pricing policies in order to meet social objectives.

Review of Action: The Bank has carried out, on schedule, a major research study of ~~The Bank has carried out, on schedule, a major research study of~~ rural electrification experience in El Salvador and produced a number of

[1] Economic Evaluation of Public Utilities Projects (September 30 1974)

internal instructions and papers relating to the economic justification of such schemes.[1/] Further field study is underway in connection with a small rural electrification component to a power loan made to Ecuador in February 1972. The major conclusions derived from these studies can be summarized:

a) Rural electrification is best undertaken within the framework of an integrated regional development program, and even in the (usual) absence of such a program it is desirable to move as far as possible to examining the potential in this broad context.

b) Successful village electrification normally requires that the village average per capita income be above a particular "threshold" level (for example, $50-60 in El Salvador in 1972) at which demand begins to develop, but growth of demand can be very rapid and it is essential to focus on the prospects for this.

c) Economic benefits in excess of prices charged for power (mainly increases in production made possible by power supply and savings on alternative fuels) can and should be routinely assessed for productive uses of electricity (such as irrigation, agro/village industries, water supply works).

d) Comparable benefits in excess of prices charged for household consumers (from savings on alternative fuels and greater value of higher-quality energy) are so difficult to estimate soundly at reasonable cost and may well normally be sufficiently small that revenue projections may generally be taken as a reasonable indicator of gross benefits of such consumption, implying that electrification for households alone in rural areas is generally unlikely to be economic.

e) It is essential to take a long-run (20-year) rather than a medium-run (5-year) term of analysis due to the importance in the economic analysis

1/ Public Utility Note 6, "The Appraisal of Village Electrification Projects" (August 1, 1973), ~~Draft Policy Paper, "Issues in Rural Electrification" (July 24, 1974).~~ and IBRD Report No. 517, "Issues in Rural Electrification" (July 24 1974), distributed under Secretary's Memorandum Sec M 74-636 of September 12 1974.

of both the prospective growth of demand and of possible ~~scale~~ scale economies from increasing network utilization.

f) Tariffs may be set below long-run marginal costs during the early years because of the generally high ~~fixed costs, the need to promote~~ initial investment costs, the need particularly at first to promote the use of the service, or social reasons (to help small business and low-income families), but subsidies (or taxes) should be made explicit and tariffs should within five-ten years aim at reflecting the level and structure of long-run marginal costs of supply in order to secure efficient allocation of resources and to avoid inequities with the much larger number of rural families , in most developing countries who will remain without electricity (probably still about 75% in the early 1980s).

g) Non-quantifiable benefits in excess of revenues (e.g. educational or other effects on households) may sometimes be sufficiently significant to warrant undertaking a project whose incremental return based on financial returns plus an allowance for productive users' benefits (in excess of prices charged) is slightly below the opportunity cost of capital, but this can only be a matter of judgment.

The appraisals of projects approved by the Bank and IDA in FY 1974, even those with significant distribution components, do not reflect any of this work. However, a preliminary appraisal has been made of a major rural electrification project in India, giving special attention to economic justification and partially drawing on the Bank's research. And direct application of research results is planned for a rural electrification project envisaged in Iran.

The results of this research were only put into final form towards the end of FY 1974, and none of the appraisals of projects approved by the Bank and IDA in that year reflect any of this work. However, a preliminary appraisal, giving special attention to economic justification and partially drawing on the Bank's research, has been made of a major rural electrification project (involving much agro-industry) in India. Direct application of research results is underway for a rural electrification project being prepared in Iran. Further projects are under active early consideration for Northeast Brazil, Malaysia, Thailand and Tunisia. Efforts are also planned in 1975 to examine the situation of rural electrification in poorer countries, especially in Africa, to see whether the approaches so far developed can be applied directly or whether further research is required. Bank/IDA financing for several African rural electrification projects is envisaged for later years.

2. New Connection Policies

Original Recommendation: The Bank should try to assess, in the economic evaluation of power

Beyond practical application and testing of the approach developed, there appears to be need for further work on methods to cope with (a) the case of countries at much lower development level than El Salvador, for instance in West Africa, to see whether the same considerations apply and b) the special problem of marginal zones of urban areas, partly due to the difficulty of charging there tariffs different from those of the rest of the urban area, even though the cost of service is higher than in quarters already developed.

2. New Connection Policies

The Bank should try to assess, in the economic evaluation of power projects at both the selection and appraisal stages, whether utility policies regarding the connection of new customers and extension of distribution systems are satisfactory in the sense that they respond to any opportunities that may exist for accomplishing significant development benefits from spread of electrification - for example, increasing efficiency of small industry or aiding production and education in rural and marginal urban areas.

Bank Response:

The Bank stated that the necessary judgments would be made in the course of appraisal missions and that they would be aided by the results expected from the research discussed under Recommendation 1 which would be disseminated among the staff as and when available.

Review of Action:

The Bank's own research and India's experience of rural electrification do indicate that the application of electricity for agricultural and industrial purposes in particular can bring substantial development benefits. However new connection policies do not yet appear to be assessed by appraisal

missions for power projects generally, and few appraisal reports have even given a projection of the number of new consumers expected to be connected. This may in part reflect the very low share of distribution in recent power lending and the fact that some loans have been to bulk suppliers, although, from the point of view of project justification and utilization, new connection policies of ultimate retailers would seem to warrant attention, whatever the Bank is directly helping to finance.

Now appraisal reports are beginning to give projections of the number of new consumers expected and appraisal guidelines are being revised to require collection of basic data on new connection policies and charges, at least in cases where this is reasonably easy because the borrower is substantially involved in distribution as well as in generation and transmission; in the case of countries where there are numerous power utilities or where the Bank's main borrower is a bulk generation and transmission company, this work will probably only prove possible in the course of sector studies. Experience in the assessment of these data will have to be developed, but rigorous application of the new approach adopted to economic evaluation of public utility projects, emphasizing the relationship between marginal costs of supply and charges, but also incorporating development benefits, should eventually enable the Bank to advise its borrowers constructively on whether the pace of connection of new consumers should, from the economic point of view, be accelerated or reduced.

Consideration is being given to an effort in FY 1976 to develop Bank familiarity with, and policy on, the special problem of new connection policies in marginal urban areas, where electrification may be very worthwhile economically but unattractive financially due

to the difficulty of obtaining adequate customer capital contributions from these typically poor areas and of subsequently charging there tariffs different from those in the rest of the urban area.

3. Self-Help for Distribution Expansion

Original Recommendation: The Bank should encourage country authorities and power companies to find appropriate institutional mechanisms for mobilizing self-help efforts in distribution expansion.

Bank Response: The Bank undertook to be on the look-out for successful experience

missions for power projects generally, and few appraisal reports even give a projection of the number of new consumers expected to be connected. This may in part reflect the very low share of distribution in recent power lending and the fact that some loans have been to bulk suppliers, although, from the point of view of project justification and utilization, new connection policies of ultimate retailers would seem to warrant attention, whatever the Bank is directly helping to finance. This lacuna in the Bank's analysis may be filled with rigorous application of the proposed new approach to economic assessment of public utility projects emphasizing the relationship between marginal costs of supply and charges. It should enable the Bank to advise its borrowers constructively on whether the pace of connection of new consumers should, from the economic point of view, be accelerated or reduced.

3. Self-Help for Distribution Expansion

The Bank should encourage country authorities and power companies to find appropriate institutional mechanisms for mobilizing self-help efforts in distribution expansion.

The Bank undertook to be on the look-out for successful experience in this field with a view to incorporating it in projects supported or otherwise propagating it, but it did not think that any general guidelines could be prescribed.

Review of Action:

The Bank's rural electrification research touched usefully on the role of cooperatives in rural power supply and pointed out that the labor component of a rural electrification project may constitute up to 25% of total investment costs, so that use of self-help arrangements may make the scarce funds available for rural electrification go further. The Bank is

aware of some successful applications of self-help in the power field, both in actual construction of distribution systems (mobilization of community financial contribution and manpower) and, ~~in operation,~~ ~~administration and billing~~ perhaps even more important, in operation, administration and billing. Some examples are Andhra Pradesh, Colombia and Turkey. But no effort yet seems to have been made in operational work to propagate experience.

The Bank has now agreed to try to have operating staff prepare, at convenient moments, brief notes on experiences of this sort for dissemination through the regular information channels established over the last years.

4. Generation and Transmission Reliability Standards

Original Recommendation: The Bank should help develop, and require of utilities and consultants, more systematic procedures for rational determination of reliability standards appropriate to different countries and areas, with a view to eventual presentation in appraisal reports of explicit justification of standards selected.

Bank Response: The Bank indicated its agreement with this general proposal but emphasized the difficulties of estimating the economic costs involved by lowering standards of service. Research and guidelines were intended to lead to appraisal reports explicitly stating the standard of risk of failure to supply implied in project proposals, even if they could not yet assess the economic optimality of this standard.

Review of Action: The related research was cut short by staff shortages, but some useful notes were circulated.[1]

[1] Public Utilities Note 3, "Generating Plant Reserve Margins" (June 20, 1973). See also Annex I to Public Utilities Research Report 3, "Framework for Electricity Tariff Studies" (March 18, 1974).

A recent system-planning study for the Comision Federal de Electricidad (CFE) of Mexico, presently under study in the Bank, reviewed the various generation and transmission reliability standards to be retained for large interconnected systems as well as some crucial economic indicators to be considered in the selection of a particular reliability standard. The Bank states that many other borrowers have been increasingly adopting computerized system-planning models which deal explicitly with the probability of load shedding and ~~that~~ facilitate consideration of alternative standards of bulk supply reliability[1]. The Bank staff has continued to review these matters in connection with lending operations on the basis of experience and judgment, but it is doubtful whether they are getting more systematic attention than in the past and it cannot be said that appraisal reports yet carry explicit statements of the risk of failure to supply.

Relative neglect of these matters may be justified by the fact that many of the more important Bank borrowers of recent years have been suffering shortages, more or less severe, of generating and bulk-transmission capacity and ~~may well be expected to continue to do~~ (although this does not generally show in the forecasts beyond a few years out) some may well be expected to continue to do so, with the new prospects, especially in some cases, of more rapid growth of demand for electricity, following the increase of oil prices, and higher costs to meet it. Yet there seems to be general agreement on the importance of this subject and the worth of trying to give it more systematic attention. The Mexican study, referred to above, is being summarized for circulation, and appraisal guidelines are being revised to refer more fully to the problem. ~~The difficulty is always in estimating the costs to the~~ The difficulty is

1) The Bank is considering propagation of one such model itself. See below, section II.

always in estimating the costs to the economy of any particular lowering of standards; the corresponding savings in power system costs are not difficult to calculate. Even with this difficulty, the Bank has suggested (2) that estimates be made, for consideration in connection with tariffs at system peak, the adequacy of load-shedding arrangements and the general circumstances of the country, of

(a) the savings in system costs that would result from adoption of the next lower standard of bulk supply reliability than the one proposed,

and (b) the corresponding amounts (or additional amounts) of load shedding that might be required if this lower standard were applied.

~~The minimum to be expected of appraisal reports is that they would give~~

It would seem, in light of the importance of the subject and its significance in any investment planning, that appraisal reports should indeed give an explicit statement of "the risk of failure to supply implied in project proposals", citing the ~~standards~~ standard reserve criterion used in planning and translating this into a probability distribution for different amounts/durations of load shedding for the particular system in question; with the apparent wide spread of system planning models now, this should not be difficult, and it would present information in a form directly comparable among countries and projects, and its systematic use would soon lead to a better understanding of the matter and, probably, better planning, more adjusted to the economic circumstances of different countries.

5. Distribution Reliability Standards

Original Recommendation: Distribution standards should be subjected to the same ~~standards~~ treatment as mentioned above for Generation and Transmission, and the Bank should encourage borrowers to carry out systematic studies to optimize distribution

Next ? →

standards to local conditions.

Bank Response: The Bank expressed general agreement with these propositions and, emphasizing again some of the technical difficulties involved, referred to planned research to be undertaken.

Review of Action: A useful note has been prepared on the aspects that need to be examined by appraisal and other technical missions[1], and work of the planned research (particularly covering European practices) has been carried out. An optimization study, of approximately the nature suggested in the evaluation report, was called for by the Bank in connection with the April 1973 loan for the Istanbul Distribution project.

The work so far done in or for the Bank suggests that there may be significant scope for saving on costs simply to reached presently intended standards in many developing countries, by improvements in system and plant design; further savings would be possible by lowering the planning standard. There is considerable interest in this subject within the Bank. It is envisaged that some specific studies may be undertaken by Bank staff to seek scope for reducing the cost of distribution, particularly an East African review partly stimulated by concern about the possibility of distribution standards presently being excessive in Zaire. A consultant study focussing on this aspect has been underway in Ghana, at the initiative of the Ghanaian authorities, with a view to preparing a project for submission to the Bank. The Bank's Research Committee

[1] Public Utilities Note 4, "Standards of Urban Electricity Distribution", (June 28 1973).

has just authorized an extension of the general research so far done to include two case studies and the preparation of guidelines to judge the adequacy of distribution plans and the benefits of alternative standards.

6. Urban Context

Original Recommendation: Appraisal and sector reports could usefully consider power in its

6. Urban Context

Appraisal and sector reports could usefully consider power in its urban context and treat explicitly the question of balance between power and other services and facilities in terms of the quantity and quality of their supply.

Bank Response:

The Bank took the view that appraisal teams had neither the opportunity nor the ability to make judgments about the adequacy and quality of other services compared with power and that anyway these were not in practice very serious issues, except possibly in rare instances in which case they would be given special treatment - as was being done at the time in a particularly intensive effort on Istanbul, involving several loans for different services and numerous studies. Normally, it was felt, these issues would be treated in the Bank's operations at the time of developing the country lending program and in discussions with Governments as to appropriate projects for Bank consideration.

Review & Action:

Several cases of imbalance of urban services, with power being consistently more plentiful and better in quality than other services (particularly water), (without any clear economic justification,) have been encountered by the Operations Evaluation Department in its work on completed Bank-assisted projects. It does seem that a problem has existed, at least in the past, and there is no reason to suppose it does not continue. If appraisal missions are not able to treat this matter, perhaps President's Reports should reflect the clear judgment of the Bank's program officers regarding the risk of the problem recurring in connection with the proposed project, possibly with support in the form of statistics on existing relative availability and coverage of different utility services in the principal urban areas to be supplied.

not continue. But there is no easy solution, and the evaluation report recommendation was probably oversimplified. Appraisal is really too late a stage for the subject to be most usefully considered. More fundamentally, while the 'consumer's view' is very important, it requires sectoral specialists to develop and cost means of improving the different services to different standards, and no satisfactory way has yet been found of calculating cost-benefit ratios or economic returns fully comparable between sectors. Perhaps the best that can be said is that Bank program officers should be aware that this problem has arisen in the past and they should try to delve into it a little at the earliest stage of project consideration by appropriate enquiries about the relative availability and coverage of different services and plans for their expansion.

7. Tariff Structures

Original Recommendation:

The Bank should further increase the attention given in recent years to tariff structures, systematically analyzing wherever possible the extent to which tariffs charged to different consumer groups reflect social marginal costs so that deviations may be explicitly justified in terms of (a) effective means of taxation of inelastic consumers, (b) subsidies warranted to induce consumption because of resultant economic benefits or (c) price distortions elsewhere in the economy.

Bank Response:

The Bank accepted this recommendation and planned research, case studies and production of appropriate guidelines, but it stressed, as an obstacle to progress the shortage of qualified people in the Bank and in borrowing institutions to work on these problems.

Review of Action:

With the aid of consultants the Bank has produced research papers[1/] (particularly) of high quality in this area, undertaken case studies (in Sudan and Tunisia) and prepared the guidelines envisaged.[2/] The specific points raised in the evaluation report recommendation now appear to be very generally accepted. Virtually all appraisals of power projects now include some treatment of the borrower's tariff structure, and the Bank has increasingly raised questions about major deviations between charges to particular consumer groups and the costs to supply them, and itself studied them in detail or called for their review by consultants and borrowers (for instance in Burma, Sudan, Malawi, Syria, Turkey, Algeria, Iceland, in recent years). Actual adjustment of borrower tariffs in light of the Bank's new emphases in this regard appears to be still in the future, but it is, for instance, very much under discussion in the case of Tunisia. The Bank's analysis will be further deepened as the research results are fully applied and as the new approach

~~Turkey, Algeria in recent years). The analysis will be further deepened as the research results are fully applied and as the new approach to economic evaluation of utility projects mentioned earlier comes into general use.~~

1/ Principally, Public Utilities Research Paper 1, "Economic Analysis of Electricity Pricing Policies: An Introduction" (January 9, 1974) and Research Paper 3, "Framework for Electricity Tariff Studies" (March 18, 1974).

2/ Public Utility Note 5, "Pricing in Power and Water Supply" (July 1973).

to economic evaluation of utility projects mentioned earlier comes into general use.

The main constraint to more frequent analysis of tariff structures against marginal costs appears to have been the shortage of appropriate Bank and consultant staff.

8. Shadow Prices

Original Recommendation:

Shadow prices should be used in the economic analysis of project validity in all appropriate circumstances, and they may be reflected if necessary in utility tariffs.

Bank Response:

The Bank agreed that ideally shadow prices should be used in benefit/cost analysis, project selection, design, and construction, and in the setting of tariffs, although in practice at the time their use was largely confined to a few cases of project selection and to the calculations of internal economic rates of return (based on adjusted financial data) and their use in ~~bidding~~ design and bidding would be difficult in ~~fact~~ reality.

Review of Action:

Guidelines since prepared on analysis of rural electrification schemes and of tariff structures and on economic evaluation of utility projects do recommend that shadow prices for foreign exchange, labor and capital be used, whenever appropriate, in benefit-cost analysis, project selection, marginal cost pricing and internal economic return calculations. Actually, there has been a widespread recognition of their usefulness; shadow prices have been used mainly in the selection of least-cost alternatives (Nigeria, Gabon, Morocco and Iceland), in a few instances in economic return calculations (Turkey, Algeria), but seldom in marginal cost and tariff reviews (Burma only); the two tariff structure case studies (Tunisia and Sudan) did not use shadow prices despite their seeming relevance to these countries — apparently because of difficulty in obtaining suggested values from the Bank's country specialists. Finally, shadow prices have not been included in the documentation provided to consultants responsible for early selection and design of projects considered for Bank financing.

Shadow prices may actually be of greatest practical significance in the electric power field in tariff studies, where failure to use them whenever appropriate could lead to wrong recommendations in view of the particularly heavy foreign exchange component of electricity costs in many countries. Hence they will become more important as the Bank increases its work on power tariffs. The principal now seems to be

Strengthened internal arrangements within the Bank seem to be needed particularly, first, to ensure the use of appropriate shadow prices in tariff studies (where they may be of greatest relevance in the electric power field) and their incorporation in terms of reference to consultants selected for feasibility and system planning studies, and, second, to secure firmer help from country specialists in the choice of appropriate values. The latter problem should be eased with the decision recently made to undertake a special effort on the generation and application of appropriate shadow prices for selected countries in each region, as a preliminary step to generalized use of these concepts.

9. Fiscal Contribution of Power Companies

Original Recommendation:

Examining the power company from the point of view of the contribution it can make to development, it might be useful to include regularly in appraisal reports a paragraph or two about fiscal aspects of the company's operations, in view of their importance in connection with tariffs, procurement, the financing of investment, maintenance of sound balance among utility services and Government revenue needs; borrowers studied show a very wide diversity of performance in this respect.

Bank Response:

Stressing that all flows between Government and power company, as well as internal cash generation substituting for Government capital contributions, should and could quite easily be considered in assessment of the fiscal effects of borrowers' operations, the Bank planned to prepare instructions on this subject.

Review of Action:

Fiscal aspects were referred to, and proposed for review by operational missions, in the previously mentioned Public Utility Note 5 issued in 1973, but shortage of staff led to postponement of the planned revision

of the appraisal checklist in which this matter was to be incorporated, and recent appraisal reports on power projects have not included the proposed special paragraph - although there appears to be a large amount of agreement that this would be quite feasible and useful, and telecommunication project appraisal reports have begun to include such a discussion. The Bank has continued to intervene on this matter, in some cases suggesting payment of taxes or dividends by the utilities to Government (e.g. Ethiopia and Ghana) and in others recommending or accepting exemption from such payments as a means to improve company profitability (e.g. Philippines and Iceland). More general draft instructions, of more elaborate nature, have recently been prepared for the handling of this aspect in all projects, not only those in power.[1/] It remains true that a good starting point, not difficult, would be a simple presentation in appraisal reports of the various aggregate flows (or substitutes of flows) between Government and power company, perhaps with some comparative figures from other power companies or other sectors in the same country; some consideration might also have to be given to internalized transfers, eg. part of revenues from existing urban consumers to finance investment in rural connections, a

~~10.~~ Utility Performance Indicators

The Bank should give more systematic attention to technical and financial indicators of utility performance other than the overall rate of return on assets, and include in appraisal reports simple tables showing the trends of selected indicators over past years; in the case of serious problems, performance targets for the future could be agreed upon during loan negotiations (along with specific steps or studies to attain them) and regularly checked by project supervision missions.

1/"Pricing and Cost Recovery of Public Sector Projects," July 1974.

financing form favored in the Bank's report on Rural Electrification.

The Bank states that short guidelines on analysis of power companies' fiscal contribution are now nearing completion and that the appraisal checklist is being revised to include a reminder on this subject.

10. Utility Performance Indicators

Original Recommendation: The Bank should give more systematic attention to technical and

(22)

of the appraisal checklist in which this matter was to be incorporated and recent appraisal reports on power projects have not included the proposed special paragraph - although there appears to be a large amount of agreement that this would be quite feasible and useful, and telecommunication project appraisal reports have begun to include such a discussion. The Bank has continued to intervene on this matter, in some cases suggesting payment of taxes or dividends by the utilities to Government (e.g. Ethiopia and Ghana) and in others recommending or accepting exemption from such payments as a means to improve company profitability (e.g. Philippines and Iceland). More general draft instructions, of more elaborate nature, have recently been prepared for the handling of this aspect in all projects, not only those in power.[1/] It remains true that a good starting point, not difficult, would be a simple presentation in appraisal reports of the various aggregate flows (or substitutes of flows) between Government and power company, perhaps with some comparative figures from other power companies or other sectors in the same country.

10. Utility Performance Indicators

The Bank should give more systematic attention to technical and financial indicators of utility performance other than the overall rate of return on assets, and include in appraisal reports simple tables showing the trends of selected indicators over past years; in the case of serious problems, performance targets for the future could be agreed upon during loan negotiations (along with specific steps or studies to attain them) and regularly checked by project supervision missions.

1/"Pricing and Cost Recovery of Public Sector Projects," July 1974.

Bank Response: The Bank agreed that there were large potential benefits to be obtained from more systematic use of technical and financial performance indicators although at that time it seemed to think of them more for purposes of broad comparison between countries, to understand better existing situations, rather than as bases for targetting improvements.

Review of Action: Instructions for the systematic use of such indicators in appraisal reports, calling for presentation of target values, were issued in ~~the November~~ final form in November 1973.[1] Of the projects for which loans were made in FY 1974, many had been appraised by that time and ~~only some~~ the appraisal report only for one (in Algeria) ~~some~~ seriously followed the instructions, perhaps ~~a little~~ too comprehensively — insofar as past values are given for 108 different items, but no targets or projected values are shown. In another, earlier case an elaborate 'Plan of Action' was developed for the improvement of a borrowing utility in particular difficulties (PLN in Indonesia: Credit 399-IND of May 1973) and was presented in the appraisal report; in response to the Executive Directors' requests during discussion of the proposed credit a progress report after one year was recently circulated to the Directors. The 'Plan of Action' gave time targets with regard to completion of certain steps and studies, but no numerical specifications of the overall improvements in performance (except for the operating ratio) that were expected to result.

There appears to be unanimous agreement in principle that greater use of efficiency indicators and targets would be useful in Bank power operations, and a growing convergence of view that informal agreement with the borrower at the time of loan negotiations on target values for a few (say 10-15) indicators is worthwhile even when there are not serious problems. Future appraisal reports may be expected normally to contain such performance indicators

[1] Public Utility Guidelines 3, "Guidelines for Project Monitoring Systems for Public Utilities Projects" (November 8, 1973).

11. Power Planning Units

Original Recommendation: The Bank should give more attention in sector and appraisal missions and institution-building efforts to the functional adequacy of utility and national power planning units.

Bank Response: Pointing out that planning units needed to be examined for the adequacy of their staff, their techniques and their influence, the Bank agreed that this was an area requiring consistent priority. Guidelines emphasizing these points were to be prepared.

Review of Action: In the event it was decided not to prepare full guidelines specifically on this subject but to include coverage of it in the Guidelines for Power Sector Studies.[1] Appraisal and sector missions have normally given attention to the planning units, but their weaknesses are seldom subject to quick solution, although the possibility of major progress is illustrated by the number of companies which have moved over time from heavy reliance on consultants to doing almost all their own planning except of a most specialized type (e.g. in Thailand, Ghana, Tunisia, Algeria and Morocco).

The Bank is constantly on the look-out for opportunities to help strengthen local planning units — checking consultant terms of reference (for feasibility studies) to see that they include training wherever suitable counterparts are available, intending to adapt an optimal generation expansion planning program developed for IAEA[2] to use by borrowers, including funds in loans for development of planning units wherever appropriate and now, for instance, actively considering a project in Liberia largely oriented to this specific purpose.

---

1) Public Utility Guidelines 5, of November 20 1973.

2) International Atomic Energy Authority: the Wien Automatic System Planning Package (WASP).

11. Power Planning Units

The Bank should give more attention in sector and appraisal missions and institution-building efforts to the functional adequacy of utility and national power planning units.

Pointing out that planning units needed to be examined for the adequacy of their staff, their techniques and their influence, the Bank agreed that this was an area requiring consistent priority. Guidelines emphasizing these points were to be prepared.

The guidelines could not be prepared due to staff shortage. Appraisal missions have normally given attention to the planning units, but their weaknesses are seldom subject to quick solution, although the possibility of major progress is illustrated by the number of companies which have moved over time from heavy reliance on consultants to doing almost all their own planning except of a most specialized type (e.g. in Thailand, Ghana, Tunisia, Algeria, Morocco and Iran).

It would seem desirable to prepare the brief guidelines envisaged on this subject and to seek more thoroughly and systematically than in the past every opportunity for consultants preparing feasibility and system-planning studies to include training in their terms of reference wherever suitable trainees are available.

12. Training

Original Recommendation:

The Bank should systematically consider the needs for training and opportunities for promoting and assisting it, in project appraisals and reviews of consultant terms of reference.

Bank Response:

This point was agreed to by the Bank, and covered by the Bank's general guidelines and memoranda on training in Bank/IDA projects.

Review of Action:

Indeed, training has received in recent projects frequent and full attention, and substantial Bank funds in some cases (Indonesia, Papua and New Guinea). Preparation of notes to help missions better assess the adequacy, ~~However, particularly close attention is apparently still required for training in planning and accounting (e.g. paras 11 and 13).~~ efficiency and economy of training programs is envisaged.

13. Financial Recording and Planning

Original Recommendation:

Despite improvements achieved there remain weaknesses in borrowers' accounting systems and procedures, particularly with regard to cash-flow planning, which need additional emphasis.

Bank Response:

The Bank stressed the time required to install effectively improvements in accounting systems and financial planning techniques, and it suggested that the problem might be less in diagnosis than in follow-up on improvements proposed or agreed. To facilitate work it envisaged the preparation of standard financial annex formats for appraisal reports and more supervision effort in this field.

Review of Action:

The standard financial formats have not yet been agreed, but project supervision in this area has continued to receive emphasis, especially in cases where particular problems are encountered as, for instance, Iran recently. Bank staff resources could probably be made more effective, as is now being suggested within the Bank and as the IDB has illustrated in practice, by greater contact with and reliance on borrowers' auditors for upgrading accounting. As regards cash-flow planning, inclusion of a revised forecast in regular six-monthly reporting requirements to the Bank might usefully be generalized.

14. World Trends in Power Financing

In view of the importance of electric power in development investment and in developing countries' foreign debt and of the past predominance of

recently. In some cases there may be opportunity for economizing Bank staff resources by greater contact with, and reliance on, borrowers' auditors[1], but the scope for this is severely limited by the scarcity of good auditors. As regards cash-flow planning, preparation of a periodically revised forecast is generally included in regular borrower reporting requirements under Bank lending, but the assistance of a supervision mission is quite often required to help produce it.

14. World Trends in Power Financing

Original Recommendation: In view of the importance of electric power in development investment and in developing countries' foreign debt and of the past predominance of

---

1) The Bank did recently issue a useful note on financial auditing: Public Utility Guidelines 9, "Illustrative Audit Report for a Power Company" (November 15 1974).

the Bank in this field and its desire to diversify its lending increasingly, the Bank should consider undertaking a systematic review of world-wide trends in capital requirements for power in the developing countries and of prospects for financing from other sources, to provide a perspective which would complement country and sector considerations in planning power lending.

Bank Response:
The Bank agreed with this suggestion in principle but pointed out that staff constraints would not permit investing in the subject the fairly significant amount of staff-time that would be necessary.

Review of Action:
In assessing the impact of the energy crisis on its member countries the Bank has in fact done some work on this subject at the global level 1/ and it has produced a paper adducing some of the general considerations relevant to estimation of future requirements for investment in electric power. 2/ Insofar as the recent changes in relative fuel prices ~~generally~~ tend to make electric power a relatively more attractive form of energy, in several important respects, than previously, although generating plants of higher capital cost are likely to have to be built increasingly, capital requirements for electric power, which have long accounted for a remarkably large part of loan financing between countries and internationally, 3/ may now become even more important. However, as mentioned, the Bank's own plans foresee lending for power in FY 1974-78 only about the same amount in real terms as in FY 1969-73 (about $3,100 million in FY 1974 prices); such lending would constitute 12% of all IBRD/IDA lending in the forthcoming period, compared with 18% in FY 1969-73. To deepen understanding of the feasibility and implications

---

1/ IBRD Report No. 477, "Prospects for the Developing Countries" (July 8, 1974).

2/ IBRD Report No. 477, Background Paper V, "Sectoral Adjustment to Higher Energy Costs" (July 8, 1974).

3/ See original evaluation report, "IBRD Report No. Z-17, "Operations Evaluation Report: Electric Power".

of this divergence in trends and to help effective implementation of the Bank's policy and program, renewed thought is being given to a more detailed investigation along the lines suggested in the evaluation report.

15. Sales of Participations in Bank Loans

Original Recommendations:

If a situation recurs such as that in 1967-68 when the Bank desired to use Joint Financing to make up for shortages in the funds it could lend, in total or to particular countries, then serious consideration should be given to making arrangements with supplier countries whereby funds available for export financing might be used to buy participations in Bank loans in amounts directly related to contracts won by their nationals.

Bank Response and Action

Although consideration was given to financial arrangements of this sort in connection with one loan, the point has not been of general relevance in the last few years insofar as the Bank has not had difficulty in raising funds directly. Sales of participations, which enjoy the advantage of considerable administrative simplicity compared with most joint financing arrangements, may possibly become relevant as one channel for applying the surpluses of oil-exporting countries to development.

16. Follow-up Evaluation Studies

Original Recommendations:

Analysis of the Bank's financing of local procurement of electrical equipment and of the contribution such financing has made to the growth of efficient domestic equipment industry would be useful for future policy. Second, a more thorough study of the economic validity of the Volta River Project in Ghana might be worthile.

Review of Action:

The Operations Evaluation Department has not had the time to pursue either of these studies to date. Doubts about the aspects of the Volta River Project questioned in the evaluation have remained and perhaps deepened,

but in connection with new projects the Bank is now giving considerable attention to possible resettlement problems, ecological side-effects and contractual terms between local authorities and international mineral concerns, so that further study of the Volta project might make only a limited contribution to strengthening Bank policy. The review of actual experience with the financing of local procurement would still seem worthwhile for execution as soon as the resources of the Operations Evaluation Department permit.

17. Central Power Institutions

Original Recommendation:

The Bank should, wherever circumstances in a country permit, encourage development of a strong central institution in the power sector through which it might later channel lending in a sector program manner (as in the last few years with CFE in Mexico). Experience suggests that such an institution (not necessarily implying regional interconnections) is essential in order to develop (a) sound and well-coordinated investment planning, (b) balanced plan implementation among regions, and (c) effective and economical use of other sources of foreign financing such as supplier credits.

Bank Response:

The Bank was generally in agreement with this recommendation, very much in line with, and indeed drawing on, its own successful experience in earlier years in this field.

Review of Action:

The Bank has continued to try to reinforce established institutions of this type (e.g. in Brazil), to assist the development of newly created ones (e.g. in Indonesia, Nigeria, Turkey and Zambia), and to encourage their emergence in other countries (e.g. India, Yugoslavia, Cameroon and Morocco). Relevant studies have recently been started, wholly or partly at Bank request, in Colombia and Iceland. Probably the suggested sector-lending approach,

Relevant studies are being started, wholly or partly at Bank request, in Colombia and Iceland. Probably the suggested sector-lending approach, excluding detailed Bank appraisal of project components and therefore more economical in staff-time on these aspects, could be applied more widely in countries where basically satisfactory central institutions of the type described have now been in existence for a number of years; a credit now envisaged for rural electrification in India would necessarily be of this type, although any potential staff time savings have in this case been more than taken up by sectoral issues and the problems of establishing a relationship with a beneficiary agency new to the Bank Group. The practical relevance of a time-saving sector-lending course depends in part on the amount of financial resources the Bank is prepared to put into power lending (see discussion under point 14 above) because the smaller it is the better it may be to ration it around in such a way as to carry a maximum of 'technical assistance' from the Bank Group.

18. Unified Jurisdiction of Local Power Companies

Original Recommendation: Experience suggests that the Bank can make a major contribution by insisting on unified control of generation, transmission and particularly distribution in urban regions.

Bank Response: The Bank agreed that this point was relevant in certain circumstances

Review of Action: While the Bank has made very useful contributions in this direction

excluding detailed Bank appraisal of project components and therefore more economical in staff-time, could be applied more widely in countries where satisfactory central institutions of the type described have now been in existence for a number of years.

18. Unified Jurisdiction of Local Power Companies

Experience suggests that the Bank can make a major contribution by insisting on unified control of generation, transmission and particularly distribution in urban regions.

The Bank agreed that this point was relevant in certain circumstances. While the Bank has made very useful contributions in this direction in earlier years the need for this emphasis is becoming rarer now with the rationalization already accomplished in many cities and regions and with the growth of national bulk supply agencies assuring generation and transmission. One case where the Bank has been trying to help resolve problems of divided jurisdiction in a relatively small area has been Istanbul, in connection with a loan approved in the first half of 1973.

19. Institution-Building Delays

Original Recommendation:

Examination of cases where the Bank held up lending pending ~~fulfillment~~ Fulfil- by the prospective borrower of certain institutional conditions shows that the Bank has sometimes made major contributions to institutional strengthening in this way but more instances where it is doubtful whether the delays were really worthwhile, partly because they proved costly and partly because of doubt either as to whether the objective sought was important enough to warrant this cost or as to how effective the Bank action was in causing the change that finally came. The value of withholding loans has to be treated on a pragmatic case-by-case basis, bearing in mind costs and potential

benefits of delays as foreseeable at the moment of decision; general rules cannot be established.

Review of Action:
Delays in power lending appear to have been fairly limited in the past two years and sound assessment of the delays that have occurred - principally on the loan for the Elbistan power plant in Turkey and on a planned loan for power development in Sudan - would require more study than is possible here. There may still be room for more frequent and systematic consideration, when delays are in prospect, of how long a delay (with its consequent costs, for instance of power shortage or higher-cost generation) may be warranted in the interests of any proposed precondition to lending.

20. Construction Cost Estimates

Original Recommendation:
The rather frequent recurrence of substantial cost overruns on projects studied, especially in some countries, suggests that somewhat more use may be worthwhile of the specialized consultant firms that the Bank has sometimes hired in recent years to check project cost estimates, especially for major civil engineering works.

Bank Response:
The Bank agreed with this recommendation, for appropriate circumstances, and planned in particular a paper on cost overruns on projects involving substantial tunnelling which would contain specific guidelines in this respect.

Review of Action:
The paper was produced[1/] and, more generally, there now appears to be a wide awareness in the Bank of the advantage in some cases of having detailed revisions of cost estimates by specialized consultants. This fairly expensive technique has actually been applied only to one project approved over the last year - the Kafue project in Zambia - for which it appears at present that the original estimates and those of the specialist consultant (which were actually lower) were about equally close to the final bids received. An individual

1/ Public Utility Guidelines 6, "Guidelines for Estimating Costs of Tunnel Construction," (January 17, 1974).

specialist was also hired by the Bank to check the cost estimates on the mining part of the Elbistan project. Although cost overruns have been a major problem on some projects currently underway with Bank support, this has been mainly due to general cost-inflation and it does not seem that greater recourse should have been had for projects approved in FY 1974 to specialist consultants of the type described.

Conclusions

Judged against the conclusions of the evaluation report the Bank, over the last two years, has accomplished a large amount of useful and appropriate work in research and preparation of policy papers and guidelines. Priorities seem generally to have been correct. What now appear to have been the more important suggestions - for instance with regard to the economics of system extensions, tariff structures and distribution standards - have, for the most part, received considerable attention, while matters with more limited practical significance and relevance in the recent period - such as the issue of planning standards for bulk supply reliability and the suggested study of world trends in financing for power - received much less effort. The Bank is undoubtedly ~~much~~ closer now than it was two years ago to being able to assist its borrowers with finding solutions to the major dilemmas mentioned at the outset to this paper. Serious application of the new proposals with regard to methods of economic justification of public utility projects will cause several of these issues eventually to be dealt with on a routine basis.

Despite these good research results, the actual operational effect of the evaluation report's principal suggestions must be considered to have been quite limited to date, whether in respect of application of research

results (as for system extensions and new connection policies) or in respect of implementation of the few direct improvements proposed (such as wide use of efficiency indicators and targets, and standard discussion of fiscal aspects of power borrowers' operations). Only with regard to the recommendations on tariff structures, use of shadow prices and distribution standards, among the evaluation report's economic suggestions, has any broad pattern of relevant operational activity begun to be visible.

The main reason for this apparent gap between principles and practice seems to be inevitable time-lag, especially in view of the rather undeveloped nature of many of the original recommendations themselves, somewhat exacerbated by a shortage of economists in the relevant period to work on operational application of the ideas emerging from research. Most of the projects approved for Bank/IDA support in FY 1974 were appraised 9-18 months after the original Evaluation ~~Report~~ report was issued in final form, but its appearance had first to be followed by ~~considerable~~ discussion of the validity and significance of its recommendations and then by continuation or commencement of work to produce the needed research or, even in the case of the relatively simple 'directly applicable' suggestions, more elaborated instructions. As regards the projects, ~~that~~ they may have been appraised well after the report's appearance, but initial work on them by the Bank or consultants, even more by the borrowers, would have started several years before — and some of the points raised in the evaluation report really need to come into consideration at those earlier stages of project preparation if they are to be very useful. So, in one sense, it is too early to have expected readily visible widespread reflection of the ~~Evaluation Report's~~ evaluation report's concerns in actual lending operations; changes over the last six months alone show that the situation is very much evolving.

Another important factor, especially in the most recent period — the second half of FY 1974 — has undoubtedly been the shortage of economists in the Bank to work on power projects and the partial diversion of effort that became necessary late in 1973

to assess the implications for borrowing countries of the drastic changes in oil prices that have occurred. Review of the staff situation suggests that the economist man-years effectively devoted to direct operational work in electric power in fact fell from about three in FY 1972 to only about two in FY 1974, partly for shortage of staff and partly because what public utility economists are available in several Regions have tended to be used primarily for work on water supply. As of July 1974 as many as half of the six economist positions that could have been considered to be principally for power work (including research) were vacant. Several departments seem to have found it very difficult to recruit people with the competence and experience to work on electric power economics. As regards the 'energy crisis', it did undoubtedly hamper the transposition of research results into practical guidelines, effective review of power appraisal reports from the economic point of view and, most important of all, demonstration in the field of the methods and procedures proposed.

As of the end of 1974 the staffing situation seems to have improved so far more by reduction of the work-pressures brought by the initial impact of the 'energy crisis' than by recruitment of additional economists insofar as two Regional economist positions remain vacant (one tentatively committed). But even when power economics gets its full planned complement of about 7 man-years under present budgetary ceilings, and taking account also of the quite tight budgetary limits on engineers and financial analysts, resources will not permit to apply across the board all the innovations and new emphases developed ~~across the board~~. Nor should they. To get a good allocation of the resources that are available the departments responsible are developing a system for early identification of the key qualitative objectives of lending operations in power. For this to work effectively ~~the reports to be essentials~~ as a means for applying and spreading the knowledge that the Bank has accumulated in areas that were identified in the ~~Evaluation Reports~~ evaluation report as of special

importance for development, it will be essential to identify prospective power lending operations early, rather than, as occasionally happens now, to bring them in to fill a gap in a country lending program.

Qualitative objectives must be determined ~~must be determined~~ mainly by the needs of the borrowing utility and, to a small extent, by the Bank's comparative advantages within the field of power. But as the only part of the United Nations significantly involved in electric power, the Bank has also somewhat of a special and broad responsibility. Our impression remains that the greatest general need of the borrowers, additional to those which the Bank has long been trying to meet, is still on the side of distribution economics, so stressed in the principal recommendations of the Evaluation Report, and tariff structures — which does not necessarily mean to say that the Bank should swing its lending heavily toward distribution, although it certainly seems likely that the share of distribution in Bank lending and Bank-supported projects may rise to higher proportions than attained in the early 1970s, but it does mean that an ability to provide convincing technical advice in these fields will be very important. In the last two years the Bank has made important advances on the economics of rural electrification and it needs to complement these with further ~~mined~~ exploration of related issues, like self-help organization, capital contributions, and distribution standards, and, particularly, to apply and test in practice the research results already ~~achieved~~ reached. Excellent means, additional to lending operations, and complementary to them, to make the most of the experience gained would be to introduce an EDI course in electric power, as is now firmly planned for FY 1976, and to organize periodic seminars of senior power officials in member countries, as is now intended; these seem particularly appropriate functions for the Bank Group given its unique position in the U.N. system in the power field.

INTERNATIONAL DEVELOPMENT ASSOCIATION | INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT | INTERNATIONAL FINANCE CORPORATION

OFFICE MEMORANDUM

TO: Mr. W. C. Baum and Regional Vice Presidents DATE: December 13, 1974

FROM: C. R. Willoughby, Director, Operations Evaluation Department

SUBJECT: Closing Report on Power Evaluation Recommendations

I am attaching for your review a revised draft of the so-called "Closing Report" that we owe to the Executive Directors finishing up our work relative to the "Operations Evaluation Report: Electric Power" that was sent to them in April 1972. This one is supposed to be in a slightly more advanced state than the one based on the evaluation of Bank operations in Colombia that I sent you in November insofar as exchanges with the relevant operating units over the last few months should have already resolved most significant differences of view (except possibly on point 4).

We would much appreciate any comments you would care to send before January 15, 1975.

CRWilloughby:lgf
Attachment

cc: Messrs. Knapp
Shoaib
Rovani
Sheehan
Beach
Dickenson
Fish
Morse
Ribi
Warford
Friedmann

OFFICE MEMORANDUM

Regional Public Utilities Division

TO: Chiefs and Mr. Vasudevan

DATE: December 6, 1974

FROM: Richard H. Sheehan, Senior Adviser, PBP

SUBJECT: Tariff Policies and Public Utilities Projects

Attached is a copy of PBP's paper entitled "Economic Evaluation of Public Utilities Projects". You saw a draft of this paper in July 1974 but the final version was not released by the Policy Review Committee until October 3, 1974. Unfortunately this paper was distributed only to senior officials of the Bank and may not have filtered down to the people actually doing appraisals and sector work. We are sending you sufficient copies so that each member of your staff may have one.

I would particularly call your attention to Section V of the paper - Pricing Policy and the Investment Decision - in which it is recommended that tariffs be set to reflect the cost of the resources used up in making additional consumption possible, subject of course to problems of special metering, the social objective of providing service to low income groups, and so on. Henceforth, we will expect that tariff policy, with particular reference to structure, be dealt with in the analysis of utility projects (either in the appraisal stage or in sector studies), and suggest that it be analyzed along the lines set out in the attached paper. At the outset, we will be looking especially critically at:

(a) declining block (or promotional) charges for electrical energy (or volume of water, or message units), for which we see little justification;

(b) the adequacy of tariffs in reflecting the costs of consumption or utilization at different times of the day or year; and,

(c) connection charges and policy for supplying new consumers.

With particular attention to electric power, where the bulk of our recent lending has been for generation and transmission, the justification for such projects ultimately rests upon the benefits to final consumers, which in turn are reflected by their willingness to pay for project output. This requires - as has been done recently in the case of a number of water supply projects - that economic justification be analyzed in terms of the relationship between the revenues obtained from final consumers as a result of incremental investment and the cost of that investment. For bulk power projects the associated distribution costs and tariff policies employed by (perhaps numerous) distribution authorities should therefore be analyzed. As it stands now, the revenues obtained from bulk sales give us no evidence at all as to economic justification. If collection and analysis of this data is too burdensome, appraisal reports should at least say so, rather than pretend that justification is demonstrated by the revenues from bulk sales.

The above may, particularly in the case of large countries with separate generation and distribution authorities, imply a good deal of additional work if projects are to be appraised correctly. We are aware of the manpower implications of analyzing tariff policy in addition to your myriad of other responsibilities, thus PBP is prepared to offer assistance in the form of desk reviews in Washington, some field support, identification of competent consultants, and help in formulating terms of reference.

Attachment

RHSheehan/JWarford:smo

INTERNATIONAL DEVELOPMENT ASSOCIATION | INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT | INTERNATIONAL FINANCE CORPORATION

OFFICE MEMORANDUM

TO: Mr. Christopher Willoughby **DATE:** December 4, 1974

FROM: Y. Rovani

SUBJECT: Policy Implementation Tools

Please find attached copies of the three papers, prepared a year ago, to which I referred in our 'phone conversation yesterday and my memo to you on the power evaluation closing report. They illustrate the kind of management tool we were beginning to develop as a means of improving the impact of our projects. Work had to be suspended on those due to understaffing and will be resumed shortly - as the situation improves. Please consider all those papers as preliminary drafts and their conclusions as tentative, particularly the lending program and sector knowledge review, which were suspended before we could incorporate the views of the regional divisions into an issues-oriented paper.

Attachments: Development objectives (November 2, 1973)
Power lending program (November 29, 1973)
Power sector knowledge (December, 1973)

none of this is really commonly agreed qualitative improvements, emphasis — Jennings most.

p 6 Jennings, qual. objectives of project clearer
Friedman - labor-intensive techniques
p 9 Bateman - more weight on socio-econ & tariff in sector knowledge.

YRovani:em

D R A F T
JHJennings:cdd
November 2, 1973

DEVELOPMENT OBJECTIVES

1. In its functioning as a development institution, the Bank in a certain sense has become a captive of its own internal procedures and terminology. Our thinking is inevitably structured by the language of our daily work, and the talk is about projects, appraisals, lending, supervision, etc. As these words and procedures have been a part of our working life, form has taken on the appearance of substance; the Bank tends to think about it's own performance in terms of lending, and the performance of departments and divisions is measured by units of Bank procedures - appraisals, loans signed, economic missions, and so on. But the name of the game is development, and this must be described in terms of things like increases in physical outputs, institutional and policy development, and growing human capabilities. Our internal procedures should be such that they encourage staff to maintain their concentration on the substance of the work; i.e., the development objectives which are the real reasons for all our operations. Procedures and methodology are means, not ends, and must be kept in the right perspective.

2. It is universally recognized that a Bank project is much more than a collection of physical works. It is, in fact, a "bundle" of development objectives, shared by the Bank, the government and the borrower. Dealing with projects as units in internal Bank procedures is convenient, but it tends to create a mental "set" which does not reflect the reality of the work, and which, because it does not differentiate between, for

example, a simple power plant or road construction project from one which contains major sector and institutional objectives, does not encourage selection and design of projects in ways which will maximize the development impact of our operations.

3. A project may help to increase output, solve a sector problem, create an institution, improve an institution, cause policy to be revised, or even change the direction of development of a country. It is the development objectives associated with a project that make it important, not the fact that it is a unit of Bank operations which involves an amount of lending. It would seem to promote an increase in the quality of Bank work if we have a mechanism which would encourage staff to keep the development objectives of all operations in the forefront of their thinking while going through the internal Bank procedures.

4. Following is a proposal for such a system. The proposal is to include a clear, brief statement of development objectives[1] in all of the

---

1/ The term "development objectives" includes both objectives which are specific to a particular operation, and the general "quality" objectives that are a part of all Bank project work (e.g., sound design, study of alternatives, least cost solution, institutional quality, financial viability, etc.,). However, it is assumed in the proposal that only the "project specific" objectives would be stated in the system.

papers and procedures of the project cycle as represented by the internal procedures of the Bank. Beginning with the establishment of the first timetable for an operation, (which should be prepared only after there is enough knowledge of the operation by means of an identification mission or otherwise to state the development objectives) a statement of the objectives would be included in or attached to the timetable. This statement in many cases would be relatively crude at that stage, but nevertheless useful. As the project progresses through preappraisal, appraisal, negotiation and presentation to the Board, the statement of the development objectives would be refined, and after negotiation, would represent the development objectives of the government, the borrower, and the Bank. These objectives, which would be usually both qualitative and quantitative, would be stated in appropriate places in the appraisal report and the President's report, and would include things like output targets and dates for accomplishment of particular objectives. These objectives would be systematically monitored during supervision; reported on by the borrower, and progress recorded in the reports of supervision mission. When the physical works are completed, the Completion Report would contain a statement of the extent to which the agreed objectives have been met, to what extent further Bank monitoring of the objectives (therefore to what extent supervision should continue) is necessary. Such a system would tie together a "project" in three important ways: (a) it would bind together what tend to become "compartments" of the project cycle in a way which fits

real life and the development objectives of the Bank; (b) it would bind together the objectives of operation as perceived by engineers, economists, financial analysts, and government administrators; and, (c) for the increasing number of multi-sectoral (e.g., rural development) projects, it would bind together the objectives as perceived by different administrative units of the Bank. It would thus allow all interested parties to look at a project as a coherent whole, and place in perspective the actions needed in the government, the enterprise and the Bank to move the project from concept to completion.

5. Such a system would have many advantages at small cost. Some of them are listed below:

a. It would provide a better means of integrating country, sector, enterprise, and project objectives;

b. It would encourage staff to think about Bank operations in terms of these objectives, rather than in terms of procedural milestones of Bank processes;

c. It would allow the Board to see and comment on an explicit statement of the objectives of the operation;

d. It would encourage issues papers to discuss issues of substance, rather than mechanics;

e. It would provide a better framework for dealing with objectives that have a long development and implementation cycle such as major institution building efforts, fundamental changes in tariff structures and policies, rural development, and so on. To the extent that such objectives could be made clear at the first timetable stage and agreed by all parties, progress toward achievement could begin immediately;

f. It would re-emphasize the supervision part of the project cycle by causing all parties to consider the progress of operations in terms of the agreed objectives, and reinforce the idea that the Bank's real interest is in completion of the major objectives;

g. It would fit with the concept of the Completion Report, which needs to be re-emphasized, and with the "audit" which will be carried out by the Operations Evaluation Department;

clearer statement of qualitative objectives of ops.

h. It would accommodate better the attempts of CPS, for example, to introduce innovative features into Bank work in the traditional sectors, and in efforts to provide a more effective approach to to new sectors. Many of these efforts, when seen from the point of simply making a loan, appear to be obstructionist; but when these efforts are seen as promoting the accomplishment of major development objectives, they become an important part of the work;

i. It would help to integrate sector work into country and project considerations, in that it would become apparent in the process of stating objectives at the first timetable stage that adequate sector work is needed to be able to make a complete statement of the objectives, and to select the emphasis which should be given to each;

j. It would add an important new dimension to the P&B Five-Year Planning System, by allowing units of lending to be discussed in terms of their potential for serving the development objectives of the Bank. For example, there is a continuous

process of selecting projects to be advanced, based, among other things, on considerations of the desired sector mix as related to country objectives, or under conditions where there is a shortage of IDA funds, or because of a restriction on the total amount of Bank group lending to a particular country, a limited number of projects have to be chosen from a larger group of potential projects. This process of selection would be much more meaningful, if based on a statement of development objectives for each project. Then the selection could be done with a view to maximizing the development impact of a given number of project units, and lending amounts;

k. There is much talk about maintaining and improving the quality of Bank work. In the final analysis, this can only mean the increasing the effects of our work on development. It must help to improve our work skills if we state in every case what we are trying to accomplish, and measure our success by achievements of objectives;

l. The system would provide means for the government itself to make more explicit judgments about the effectiveness of Bank assistance and the performance of its own unit, the borrower. I believe that this would be valuable, although many governments may not see the need for such assistance;

m. It would allow the Bank and the government to measure the progress of a project by measuring its progress toward completion of the objectives. This progress can, and frequently does, take place independently of progress as seen from the point of view of passing the milestones of internal Bank procedures. This would give a different cast to the lending program and annual lending targets, because the timing of the signing of a loan ~~which~~ may be to some extent irrevelant to progress toward completion of the objectives;

n. It would provide a better conceptual framework for considering multi-sectoral projects, which seem to cause problems ~~when approached~~ from the point of view of administration of the operation within the Bank. If the objectives are clearly

stated, and the Bank resources necessary to establish the means for obtaining the objectives are committed to the operation, the remainder is an administrative question, and can be handled in several different ways. At present, there is a tendency for the administrative unit assigned to manage the multi-sectoral projects to impose its particular point of view on the operation. This may mean that some of the objectives which do not happen to be of primary concern to the particular administrative unit will be overlooked or de-emphasized;

o. The system would facilitate the work of CPS and DPS whose very function can be described in terms of the proper selection of objectives and application of the techniques which are most likely to lead to accomplishment of the objectives; and,

p. It would facilitate implementing shifts in emphasis of Bank policies (objectives). There is a danger in this, because it would give over-alert staff members more opportunities to

to reflect any new policy emphasis in operations, whether or not it may apply to the circumstances of the operation. However, since all objectives would be clearly and explicitly stated, it would make incongruous objectives stand out, and where the objective is appropriate, it would be kept in perspective along with the other objectives.

This system would accommodate itself to all kinds of Bank lending operations from program loans, through a simple fifth loan to a development finance company, to technical assistance loans. It could be made clear that all of these are eminently sensible Bank operations in light of the stated objectives.

As stated earlier all of these objectives could be achieved at minimum cost. Financial costs would be negligible. There would be no need to change the Bank's internal procedures or organization, but it could possibly add a small amount to the processing time for operations. Some of the Bank's decision makers may see a cost in terms of making their life more complicated by forcing them to say more explicitly what they hoep to accomplish with a given operation, but I believe this is more properly recorded as a benefit than a cost. There might be a political cost in the sense that the system would make it clear that the Bank's business is development and not making loans. Those countries which

see the benefit of Bank's activities solely in terms of the foreign exchange that they may make available, may not take kindly to being forced to focus on things like institution building and politically sensitive policy changes. Again, this seems to me to be a benefit rather than a cost.

DRAFT: November 29, 1973
EFriedmann:jr

TO: Public Utilities Division Chiefs

FROM: Y. Rovani
Power

SUBJECT: Lending Program Review

As you are aware we have been interviewing your staff for the purpose of preparing a preliminary review of the Power Lending Program which might serve all of us to detect its main trends both regionally and globally, and to provide signals for actions that might be needed.

I would appreciate if you could review the attached draft to check the information pertinent to your Region as well as to comment on its conclusions and suggestions. I would also welcome your own ideas on any other aspects of the lending program which we might have ignored in this analysis. Maybe you can do this in time for our discussions in our next regular meeting December .....

Attachment

EFriedmann:jr

Spare

DRAFT: November 29, 1973
EFriedmann:jr

THE LENDING PROGRAM FOR POWER

A Preliminary Review

1. This paper summarizes the main features of the Power Sector lending program -- Bankwide and for Regions -- and highlights some trends that can be detected when comparing the 5-year period FY74-78 with the previous one, FY69-73. They are categorized as follows:

i) Number of Projects and lending amounts

ii) Annual levels of lending

iii) Geographical coverage

iv) Urban distribution projects

v) Rural Electrification

2. Annexes 1-6 briefly list all present projects for period FY74-78 indicating the country, main purpose (e.g. generation, rural electrification, training), date, and amount of likely loan. Annexes 1-5 do this by Regions and Annexe 6 by FY.

3. The information on past lending was drawn from official Bank documents. With regard to the period FY74-78 the information was obtained during personal interviews of Miss P. Peter (Research Assistant of PUD) with the Regional divisions staff; the current P&B Operations program for the Sector was used as a reference starting point.[1/] The first remark worth making is that the information available on the projects presently included in the lending program is very limited, particularly beyond FY75; it is generally known at this time what the main purpose of the projects will be (generation, transmission, etc.) but which particular plant, or what

---

1/ Miss Peter has also prepared the Tables and Annexes of this paper.

the loan amount might be as well as other important aspects remain very uncertain. This situation may indicate Bank weaknesses in Sector knowledge which preclude longer term planning of lending and preparation of a suitable pipeline of projects responding to Sector needs and Bank goals.

4. The Table below, shows the generally small discrepancies which are apparent at this time between the P&B Operations program and the one envisaged by the Regional staff.

Table 1

Number of Power Projects - FY74-78

Region	P&B	Regional Staff	Difference
Eastern Africa	18	18	-
Western Africa	12	14	+ 2
Asia	22	18	- 4
EMENA	30	32	+ 2
LAC	33	37	+ 4
Total	115	119	+ 4

Number of Projects and Lending Amounts

5. Table 2 below indicates for each region the number of projects, amount loaned (or proposed), and the percentage of power lending in total Regional/Bank lending for both periods FY69-73 and FY74-78.

Table 2

	FY69-73			FY74-78			Changes in %	
Region	No. of Projects	US$	% Total Area Lending	No. of Projects	US$	% Total Lending	No. of Projects	Loan Amount
Eastern Africa	6	123.8	11	18	413.5	13	200	234
Western Africa	7	119.6	13	14	181 +	7	100	51
Asia	17	626.2	20	18	620.2 +	7	6	29
EMENA	15	353.2	9	32	845.5	12	129	147
LAC	27	1,009.1	22	37	1,083.8 +	13	42	8
World	72	2,231.9	17	119	3,144	10%	70	52

6. The main trends shown by this table are:

i) A global reduction of Power lending as a percentage of total Bank lending, from about 15% to something like 10%. This global reduction is mainly the result of a drop in Power lending in the two major regions of Asia and LAC from past levels of about 20% to those already prevalent in the other regions, about 10%.

ii) Notwithstanding the above reduction of Power lending as compared with total Bank lending, there continues to be a significant upward trend in the number of operations. Bank-wide the number of Power loans is expected to go up from 70 to 119 (or about 70%). The increases are most marked in Eastern Africa (200%), Western Africa (100%) and EMENA (129%), less so in LAC (49%) or almost none in Asia.

iii) Assuming that the allocation of Bank lending is resulting increasingly from explicit development strategies as thought out (mainly) by Regional economists, it is interesting to remark that Power lending retains significantly more importance in Eastern Africa, LAC and EMENA (about 13% of total) than in Western Africa and Asia (about 7%).

Annual Levels of Lending

Table 3
Annual Level of Lending
No. of Projects

	FY69	FY70	FY71	FY72	FY73	Total	FY74	FY75	FY76	FY77	FY78	Total
Eastern Africa	1	2	3	-	-	6	4	5	4	2	3	18
Western Africa	3	1	2	1	-	7	1	3	4	5	1	14
Asia	3	3	5	3	3	17	5	4	2	2	5	18
EMENA	3	1	4	4	3	15	8	6	9	4	5	32
LAC	7	7	3	6	4	27	9	10	4	6	8	37
Total	17	14	17	14	10	70	27	28	23	19	22*	119

* This figure includes 11 undated projects (4-Asia, 2-EMENA, 5-LAC)

7. Table 3 above shows the number of projects per year and per region for the two five-year periods. Large increases in power lending are expected to occur in most regions in FY74 and FY75, while overall declines show in FY76-78. Among the regions, only Western Africa predicts a more or less steady increase through 1977.

If FY74 figures are realistic it would mean that present staff is adequate to carry a substantially larger load than previously (e.g. FY73) and possibly in excess of what would be required after FY75. This, however, should be qualified by the fact that more sector work and more project preparation and supervision work will be needed at the end of the period if Bank lending begins to shift toward more difficult projects -- such medium and small cities distribution, and rural electrification -- as well as due to the expansion of lending to many new borrowers (para. 8)

Geographical Coverage

8. As shown in Table 4 below the Bank is making power loans to 41 (42%) of its 97 borrowing countries; by 1978, however, coverage is expected to reach 64 (66%).[1/] This increase is certainly a reflection of deliberate efforts to expand regional coverage into countries which have not previously received funds for power as well as the maintenance of a power lending program in countries where it has been active in the past.

1/ Loans to countries classified in the "poorest 25 countries" may increase from 3 (FY69-73) to 8 (FY74-78). This increase will, however, be affected by the availability of IDA funds.

Table 4

Countries with Power Projects

Region	Total No. of Countries in Region	FY69-73 No.	FY69-73 % of Total	FY69-73 No.	FY69-73 % of Total	% Change
Eastern Africa	17	6	35%	11	65%	83%
Western Africa	19	4	21%	10	53%	150%
Asia	15	10	67%	7	47%	- 30%
EMENA	24	7	29%	17	71%	143%
LAC	22	14	64%	19	86%	36%
World	97	41	42%	64	66%	58%

"Disengagements" appear to exist in some cases (e.g. Venezuela) but this is a rather exceptional situation not necessarily linked to sector characteristics. More important is that the lending for 1974-1978 includes 18 countries which will receive their first power loans. Among the regions, Asia and Latin America have the highest present geographical coverages. Their percentages 67 and 64 are nearly double the next closest figure of 35% in Eastern Africa. During the period FY74-78 all regions with the notable exception of Asia will continue to increase their country average. The situation in Asia -- which in fact will be lending to fewer countries than in the past -- is attributed to a coincidence of numerous political conflicts in the region.

Urban Distribution

9. Table 4 below shows the number of project which include urban distribution, either as its main component or as a secondary item.

Table 5

Region	FY1969-1973				FY1974 - 1978			
	Total Power Project	Mainly Distrib.	Some Distrib	Total with Distrib.	Total Power Project	Mainly Distrib.	Small Distrib.	Total with Distrib.
Eastern Africa	6	-	-	-	18	1	2	3
Western Africa	7	1	3	4	14	3	6	9
Asia	17	2	3	5	18	2	-	2
EMENA	14	2	3	5	32	-	2	2
LAC	26	1	9	10	37	4	5	9
Bank Total	70	6	18	24	119	10	15	25

The main conclusions to be drawn from this table are:

i) The total number of projects including urban distribution (main and/or secondary) will remain about the same, 24 to 25. A rather disappointing situation in view of recent concern with the "ultimate user" and considering that the total number of Power projects as a whole is expected to increase by about 70%. However, the fact

that the number of projects mainly addressed to distribution is likely to increase from 6 to 10 may indicate that a certain trend in this direction is developing slowly.

ii) Eastern Africa and Western Africa alone appear to be making special efforts in this area of lending for the period FY74-78, while Asia and EMENA are in fact reducing their past activities in the field.

10. It appears that Urban Distribution projects are perceived both by the Borrowers and the Bank's project staff as rather unsuitable vehicles for Bank lending. The main reasons given are that distribution loans -- with the exception of those for major urban centers -- are likely to be small and have a relatively lesser proportion of foreign exchange. One way out of these difficulties would be the preparation of package loans handling the needs of several medium and small sized urban centers, and possibly a number of independent utilities, under a suitable institutional arrangement.

Rural Electrification

11. Table 6 below indicates the rural electrification program FY74-78. No such table is needed for the previous period as only two loans (Mexico and Ecuador) appeared to have some funds allocated directly for this purpose (of course many Bank projects include generation and transmission facilities without which the country's own rural electrification cannot be sustained). The table shows that about 10% of all projects will include at least some rural electrification. Only one region, Eastern Africa, is not yet proposing any such project, while all other regions appear to have made special efforts to respond to recent Bank concern for action in the rural areas. In spite of the above, most Regional staff expressed reservations regarding the rationale for rural electrification in some areas -- particularly Africa -- where distribution facilities for the urban poor are also non-existent or very unsatisfactory,

and could be built at less cost and possibly with higher social and economic justification.

Table 6

Rural Electrification Projects

FY74-78

Region	Total Power Projects	Mainly Rural Electrification	Some Rural Electrification	Total with Rural Electrification
Eastern Africa	18	-	-	-
Western Africa	14	1	-	1
Asia	18	2	-	2
EMENA	32	3	1	4
L&C	37	=	5	5
Total Bank	119	6	6	12

Miscellaneous

12. Several other matters and issues turned up during discussion of the lending program with Regional engineers. They seem to indicate increasing Regional concern for the continually improving quality and comprehensiveness ("new dimensions") of Bank projects in this sector. They are briefly recorded below.

i) Power projects are generally being selected within the context of a National or Regional Power development plan. However, the quality of these plans is open to many questions regarding the analysis and knowledge of market priorities, energy and other local resources,

availability of adequate feasibility studies, pricing policies, etc. The quality of consultants' studies -- and particularly of local firms -- appear to be a concern of most engineers, and it seems that more staff time needs to be allocated to Bank technical assistance in these matters.

ii) Most staff was aware of the need to use lending funds for training programs, and training centers, particularly for improving operations and maintenance practices are envisaged in many projects.

iii) There is wide awareness of the environmental and resettlement problems likely to arise in large generation projects. The special problem of bilbarziasis is earmarked as a particularly serious one in Eastern Africa.

iv) Different ideas prevail on the merits of labor intensive construction methods as they apply to power projects. Guidance may be needed on this subject.

Conclusions

13. The preliminary review of the Lending Program FY74-78 shows that:

i) Advance knowledge of projects is very limited specially for FY76 onwards. This appears to be a reflection of insufficient Sector knowledge and forward-thinking regarding Bank goals in the Power Sector of many countries.1/

ii) Important increases (about 70%) in the number of operations will take place but they will vary from a 200% increase in Eastern Africa to practically none in Asia.

1/ We expect to produce shortly a paper on the status of Sector knowledge -- at least for those regions which have already completed the Questionnaires -- which we sent to them earlier this year. In that paper we expect to discuss more thoroughly this important subject and make recommendations for action both at the Regional and CPS levels.

iii) Relative to total Bank lending, power lending will decrease from 15% in FY69-73 to about 10% in FY74-78; the decreases being most marked in Asia and LAC.

iv) Uneven rates of annual lending are foreseen with a substantial step like increase during FY75-76. Regions may need to look at their staffing requirements in the light of these uneven work-load programs and longer term operational programs.

v) Geographical coverage will be substantially greater, particularly in Western Africa and EMENA. 18 countries will receive during this period their first Power Loan.

vi) There is little change in lending for distribution. This seems to be an area calling for more Bank initiative, particularly with regard to urban centers other than major cities.

vii) Six Rural Electrification projects are presently anticipated. This is a small part of total lending but it might be appropriate, especially as other rural electrification activities will no doubt be carried out through Rural Development projects (e.g. Mexico).

viii) Interviews with regional staff indicate growing awareness and sensitivity regarding most "new dimensions" of Bank lending (e.g. pricing structures, training, improved planning, etc.) and there is little doubt that future Bank loans will increasingly incorporate provisions of this type which will improve the quality of the operations.

Attachments (6 Annexes)

EFriedmann:jr

Proposed Lending Operations

Annual Breakdown

1974

		Amount Of Loan (millions US$)
Generation		
Eastern Africa	Malawi - Tedzani II	7.5
	Sudan - Power II CEWC (and Trans.)	15
	Zambia - Power Kariba North	40
	Zambia - Kafue, Stage II	115
Asia	Philippines - Power VI (and Trans.)	50
	Thailand - Power V (and Trans.)	35
EMENA	Iceland - Sigulda Power	10
	Iran - Power III (and Trans.)	70
	Morocco - Power I (and Trans.)	25
	* Oman - Power I (and Rural Electrification)	8.5
	Romania - Turceni Thermal Power	40
	Syria - Power I	36
	Turkey - Power Tek Elbistan	85
LAC	Bolivia - Ende III	6
	Brazil - Power Itumbiara	125
	Chile - Power V Supplement	3.7
	Nicaragua and Honduras - Managua Power	7
Transmission		
Asia	Malaysia - NEB Power III	15
EMENA	Algeria - Power I	20
LAC	Brazil - Power Paulo Alfonso IV	50
Distribution & Rural Electrification		
Asia	* India - Rural Electrification I	40
	* Papua and New Guinea - Power II (distribution and training)	11.5
LAC	Argentina - Segba Power IV (and Trans.)	60
	Panama - Power III (and Gen., Trans.)	30
	Peru - Power Distribution- Empresas	25
Generation, Transmission & Distribution		
Western Africa	Liberia - Power Supplement	2
LAC	Ecuador - Power IV	5.5

	1975	Amount Of Loan (millions US$)
Generation		
Eastern Africa	Kenya - Power II	27
	Madagascar - Power I (and Trans.)	20
	Swaziland - Thermal Power Station	20
	Swaziland - Thermal Power Preliminary	3
	Tanzania - Power II (and Distrib.)	5
Western Africa	Liberia - Power III (and Distrib.)	3
Asia	Indonesia - Power IV	60
	Philippines - Power VII	35
EMENA	Afganistan - Power I	7
	Cyprus - Power/Desalination	8
	Iran - Power IV	70
	Romania - Multi-Lower Olt River	25
	Turkey - Karakaya Power	50
	Yugoslavia - Power Gen. I	25
LAC	Argentina - Alicura Hydro	30
	Costa Rica - Power Aluminum I	30
	Costa Rica - Power V - Arenal	25
	Guatemala - Power IV (and Trans.)	25
	Paraguay and Brazil - Itiapu Hydro	250
Transmission		80
Asia	India - Power IV	80
LAC	Colombia - Power NC Intercon.	20
Distribution and Rural Electrification		
Western Africa	Ghana - Power Distribution ECG III	5
	Nigeria - Power V (and Gen.)	60
Asia	* Thailand - Rural Electrification	8
LAC	Bolivia - EPC II (and Trans.)	4.6
	* Jamaica - Power II	15
Generation, Transmission and Distribution		
LAC	* Haiti - Power I	10
	Mexico - Power XII	100

	1976	Amount Of Loan (millions of US$)
Generation		
Eastern Africa	Ethiopia - Power III	40
	Mauritius - Power II	4
	Uganda - Untitled	40
Western Africa	Cameroon - Power I (sm. Distrib.)	10
	Gabon - Generation	10
	Ivory Coast - Power I (and Distrib.)	15
Asia	Malaysia - NEB Power VII	20
	Pakistan - Power I	30
EMENA	Algeria - Power II	30
	Morocco - Power II	20
	Romania - Iron Gates Power	25
	Yemen, A.R. - Generation	-
	Yemen - Power I	5
LAC	Peru - Power VI	20
Transmission		
EMENA	Jordan - Power II	6
	Yugoslavia - Power Transmission II	25
Distribution and Rural Electrification		
Western Africa	* Mauritania - Rural Electrification	2
EMENA	* Iran - Power V	50
	* Tunisia - Rural Electrification	5
Generation, Transmission and Distribution		
Eastern Africa	Tanzania - Power III (Kidatu II)	13
LAC	* Guyana - Thermal Power	-
	Panama - Power IV	10
Unidentified		
LAC	El Salvador - Power VII	6

1977

		Amount Of Loan (millions of US$)
Generation		
Eastern Africa	Malawi - Power III (and Trans.)	5
Western Africa	Ghana - Generation	-
	Mali - Multi-Power (Irrig. and Distrib.)	20
	Senegal - Power II	6
	Sierra Leone - Power III	3
Asia	Indonesia - Power V	60
	Thailand - Power VI	-
EMENA	Bahrain - Power/Desalination	-
	Turkey - Karababa	50
	Yugoslavia - Power Generation II	35
LAC	Colombia - Power	40
	Peru - Power VII	15
Transmission		
EMENA	Romania - Unidentified	50
Distribution and Rural Electrification		
Western Africa	Nigeria - Power VI (one-third Gen.)	25
LAC	Brazil - Power N.E.	50
Generation, Transmission and Distribution		
Eastern Africa	Sudan - Power III	10
LAC	Mexico - Power VIII	75
Unidentified		
LAC	Chile - Power VI	30
	Guatemala - Power V	10

1978

		Amount Of Loan (millions US$)
Generation		
Eastern Africa	Kenya - Power IV	10
	Tanzania - Power IV	7
	Zambia - Kafue, Stage III	45
Western Africa	Ivory Coast - Power II (and Distrib.)	20
EMENA	Yemen - Power II (and Distrib.)	5
	Yugoslavia - Power Gen. III	35
LAC	Brazil - Power XINGO	70
Transmission		
EMENA	Algeria - Power III	25
Distribution		
Asia	Philippines - Power VIII	35
Generation, Transmission and Distribution		
LAC	Panama - La Fortuna I	10
Unidentified	El Salvador - Power VIII	10

Undated

Generation	
Asia	India - Generation
	Malaysia - Generation (hydro)
	Papua and New Guinea - Generation (hydro & expansion)
EMENA	Syria - Power II - Generation
LAC	Bolivia - Generation
	Ecuador - Quasequil Generation
	Ecuador - Generation and Transmission
Transmission	
Asia	Indonesia - Transmission
LAC	Bolivia - ENDE IV Interconnection

Undated (continued)

			Amount Of Loan (millions of US$)
Rural Electrification			
EMENA	*	Jordan - Jordan Valley Rural Electrification	
Generation, Transmission and Distribution			
LAC	*	Uruguay - Thermal Expansion	

* Indicate Rural Electrification projects or projects with Rural Component

PPeter

DRAFT
D.L. Bateman

1. This paper summarizes and interprets the results of the questionnaire "Checklist on Power Sector Information" for the LAC Region. It is the first of a series of five (one for each Region) papers giving our evaluation of the relative adequacy of power sector knowledge.

2. The purpose of the questionnaire was to provide us with sufficient information to compare the state of knowledge on a subject by subject and country by country basis. Based on it we could systematically study the situation and locate those areas where we should concentrate our efforts. In answering the questionnaire the staff was asked to assign a rating to the state of knowledge on the particular subject, referred to in each question. There were three possible ratings: "A" (3 points) satisfactory, "B" (2 points) fair (but additional work needed), and "C" (1 point) unsatisfactory (major effort needed).

3. Each question on the checklist has been placed into one of the following four categories:

1) Technical

2) Finance

3) Legal/Institutional

4) Socio-Economic

Each of the four categories was analyzed independently of the others to point out the areas of strength and weakness within the category. The categories were then compared with each other, and ranked according to their overall state of knowledge.

4. Annex 1 is a complete listing of the responses to the questionnaire, with tables attached summarizing the results. The questionnaire is the sole source document used for the analysis (except for table 3 which was taken from interviews).

Technical

Sector knowledge is fairly good in almost all subjects in the technical area. Satisfactory information is available on the power plants in use, i.e. the various types, generation, installed capacities, geographic distribution, etc. We are also aware of the reasoning behind choice of location in most cases. In fact, knowledge on these subjects was rated as satisfactory in 61% of the cases, with another 22% being rated as fair. Such a favorable response would seem to indicate that in the past the Bank's emphasis on sector knowledge has been on the engineering aspects of the Bank's operations.

The only subject where a lack of technical knowledge is demonstrated is in regard to the self-producers.

For the category as a whole, 23% of the responses were "C" unsatisfactory, and 48% were "A" satisfactory, ranking it second behind Legal/Institutional (average score 2.2).

Finance

You might expect that the Bank, being a financial institution of some sophistication would have more information about its borrowers on the subject of finance than on any other, but surprisingly this is not the case for LAC power sector. Granted, on quantitative accounting subjects such as asset valuation and depreciation policies we have fairly good information, but these are basically empiracal subjects, and should be readily available from the borrowers.

However, as the issues become more qualitative in nature the relative adequacy of the information declines. For example, the question on tariffs which included such sub-topics as present regulations, the mechanism for determination and application of electricity charges, policy and criteria for determining tariff structure, and other tariff related topics, had a mean score of only 1.9, ranking it 19th of the 24 questions. Satisfactory information is available in only 20% of the cases, and is unsatisfactory in 30%. A similar situation exists on the priorities and magnitudes of investments in the power sector. The composite rating is 2.0, ranking it 18th, but only 35% of the cases were satisfactory, with an equal percentage being unsatisfactory. Only fair responses were registered on such subjects as costs of production of electricity and the investment program.

For the category as a whole, 28% of the responses were "C" unsatisfactory, and 36% were "A" satisfactory, ranking it third behind Legal/ Institutional and Technical (average score 2.1).

Legal/Institutional

Power sector knowledge in the Legal/Institutional category is more complete than in any of the others. Excellent information is available on almost all aspects of the companies themselves, government laws and codes, and on the regulators of the power industry.

On the questions about the companies, i.e., management, staff, organization, etc. almost 60% of the responses were "satisfactory" with less than 5% being "unsatisfactory". With one exception, the responses to the questions relating to the government are equally as favorable. The exception referred to is the question on government policy regarding village electrification. Exclusive of this question, the responses to questions on the government issues received 63% satisfactory, with 20% being unsatisfactory. Including it, changes the results to 50% satisfactory, with 24% being unsatisfactory.

The category as a whole comes out very well with responses being "A" satisfactory in 53% of the cases, with only 20% being "C" unsatisfactory.

Socio-Economic

Not surprisingly we find that the area that needs the most additional work is in the socio-economic category. In particular, the responses indicate an almost complete lack of information on the subject of rural electrification. The question on benefits of rural electrification was the lowest scoring on the entire questionnaire (24th). The scores for the questions on access to service and percentage of rural households receiving electricity were nearly as bad, ranking 21st and 23rd respectively. For these three questions, only 7% of the responses were "A" satisfactory, and 70% were "C" unsatisfactory. Considering this severe lack of information, we should certainly devote more effort to this subject, especially in light of the Nairobi speech by Mr. McNamara.

However, viewing the socio-economic category for the system as a whole (primarily urban), the picture is not as weak. We seen to have adequate information on plans for future development in the power sector, production and consumption (by sector) patterns, and excellent information on growth trends in aggregate and per capita consumption.

For the socio-economic category, 44% of the responses were "C" unsatisfactory, and only 24% were "A" satisfactory.

Table 1

Question #	Subject	Responses A (%)	B (%)	C (%)	Ø	Average Score (3 point scale)
Technical						
3.1	Types of powerplants and capacities	15 (75)	2 (10)	3 (15)		2.6
3.2	Geographic distribution of plants	13 (65)	3 (15)	4 (20)		2.5
3.4	Generation, consumption and losses	9 (45)	8 (40)	3 (15)		2.3
2.6	Design criteria for power systems	7 (35)	10 (50)	3 (15)		2.2
3.7	Installed capacity of self producers	3 (16)	5 (28)	10 (56)	2	1.6
	Total Technical	47 (48)	28 (29)	23 (23)	2	2.2
Finance						
3.8	Trends in capital investment	8 (40)	9 (45)	3 (15)		2.3
5.2	Asset valuation	9 (45)	7 (35)	4 (20)		2.3
3.3	Costs of production of electrical energy	7 (35)	7 (35)	6 (30)		2.1
2.4	Investment program	8 (40)	5 (25)	7 (35)		2.1
2.3	Priorities and magnitudes of investments in power sector	7 (37)	5 (26)	7 (37)	1	2.0
5.1	Tariffs	4 (20)	10 (50)	6 (30)		1.9
	Total Finance	43 (36)	43 (36)	33 (28)	1	2.1
Legal/Institutional						
3.6	Characteristics of producing companies	11 (55)	7 (35)	2 (10)		2.5
1.1	Government policy governing aspects of power development	12	5	3		2.5
1.2	Means by which decisions pertinent to the power sector are implemented	13 (65)	2 (10)	5 (25)		2.4
1.3	Details of pooled operation	12 (67)	1 (6)	5 (29)	2	2.4
6.1	Management and staff	9 (45)	8 (40)	3 (15)		2.3
4.1	Government policy regarding village electrification	5 (25)	9 (45)	6 (30)		2.0
	Total Legal/Institutional	62 (53)	32 (27)	24 (20)	2	2.3
Socio-Economic						
2.1	Per capita consumption: growth trend	11 (55)	7 (35)	2 (10)		2.5
3.5	Production and consumption patterns	9 (45)	5 (25)	6 (30)		2.2
7.1	Future development	5 (25)	12 (60)	3 (15)		2.1
2.5	Relationship between electric consumption and economic activity	5 (25)	6 (30)	9 (45)		1.8
2.2	Access to service	2 (10)	8 (40)	10 (50)		1.6
4.2	Number + percent of rural households receiving electricity	1 (5)	5 (25)	14 (70)		1.4
4.3	Benefits of village electrification	1 (5)	1 (5)	18 (90)		1.2
	Total Socio-Economic	34 (24)	44 (31)	62 (44)		1.8
	TOTAL POWER SECTOR KNOWLEDGE	186 (39)	147 (31)	142 (30)	5	

December 1973

Table 2 is a proposed sector work program based on the results of the questionnaire. The basic conclusions are as follows:

1) A major effort to improve power sector knowledge is needed in four countries: Haiti, Paraguay, Surinam, and Uruguay. Two of the countries, Haiti and Paraguay require a complete sector survey, while the other two, Surinam and Uruguay, require a sector review of specific areas.

2) A moderate effort to improve power sector knowledge is needed in four countries: Argentina, Guatemala, Guyana and Venezuela. These countries have more defined gaps in sector knowledge, which can be filled via sector reviews for Argentina and Guatemala, and via sector studies for Guyana and Venezuela.

3) The remaining 12 countries require relatively minor sector work, which can be done in the course of normal lending operations, to bring the state of knowledge of the power sector up to adequate levels, or to maintain it at satisfactory levels.

The manpower required to complete this proposed sector work is 218 man-weeks. A breakdown of the required input is shown below.

Type	Number	Unit Cost (mw)	Total Cost (mw)
Sector survey	2	30	60
Sector review	4	20	80
Sector study	2	15	30
Sector "Brief"	12	3-5	48
Total			218

Table 2

Country	Effort			Method[1/]	Suggested Concentration
	Major	Moderate	Minor		Category/Subject(s) (Question #s)
Argentina		x		Sector review	Finance/All
Bolivia			x	Brief	Socio-economic/4.3
Brazil			x	Brief	Socio-economic/2.2, 4.2, 4.3
Colombia			x	Brief	Socio-economic/2.2, 3.5
Costa Rica			x	Brief	Finance/5.1
Ecuador			x	Brief	Socio-economic/2.5, 4.2, 4.3
El Salvador			x	Brief	Socio-economic/2.2, 4.2, 4.3
Guatemala		x		Sector review	Finance/2.3, 3.3, 5.1
Guyana		x		Sector study	Socio-economic/All
Haiti	x			Sector survey	All
Honduras			x	Brief	Socio-economic/2.5, 4.3
Jamaica			x	Brief	Socio-economic/4.2, 4.3
Nicaragua			x	Brief	Socio-economic/2.2, 3.5
Panama			x	Brief	Socio-economic/4.2, 4.3
Paraguay	x			Sector survey	All
Peru			x	Brief	Socio-economic/4.2, 4.3
Surinam	x			Sector review	Finance/All; Legal/Inst./All
Trinidad & Tobago			x	Brief	Socio-economic/2.2, 2.5, 4.2, 4.3
Uruguay	x			Sector review	Finance/All; Socio-economic/All
Venezuela		x		Sector study	Socio-economic/All
Total	4	4	12		

1/ There are basically three (3) types of sector missions

1) Sector/Subsector Survey - A broad analysis of sector (or major subsector) potential, problems, policies and issues cast in the medium to long-term perspective. (30 man-weeks)
2) Sector/Subsector Review: In less depth than survey. May involve initial review of sector or updating of a previous sector survey. (20 man-weeks)
3) Sector Study: Analysis of one or several specific sector problems, policies or issues or of a subcomponent of the sector too limited to be considered a major subsector. May cut across national or sector boundaries. (15 man-weeks)

Brief denotes work that can be done in the course of the normal lending operations. (3-5 man-weeks)

December 1973

The regional 5-year programs of sector missions and lending operations are shown in Table 3. Sector missions are planned for Argentina, Colombia, Ecuador, Venezuela, and two other, as yet unspecified countries (a mission is also planned for Chile). Coupled with the lending operations, sector work can be done in at least 15 of the 20 countries, if the regional programs are followed. (Unfortunately the 5 countries not included in either the lending or sector programs are countries that need sector work the most, Surinam, Trinidad and Tobago, Nicaragua, Paraguay, and Uruguay.) The regional manpower input for sector work during the period is 265 man-weeks. Of this, 150 mw is accounted for by the sector missions listed above, and 115 mw are left unallocated.

We have compared the Region's 5-year sector work program as shown in Table 3, with our proposed program (Table 2), and note several differences that we might bring to the Region's attention for discussion.1/

1) Five countries that we feel sector knowledge is very weak and not included in the regional program.
2) The Region plans to rely on comprehensive sector survey, whereas we propose shorter sector "reviews" and studies.

In any case, the Region's planned manpower input of 265 man-weeks is ample, and leaves much room for flexibility.

1/ The Region's program, however, is at present very loosely defined.

Table 3

Country	Fiscal Year 1974	1975	1976	1977	1978	Shown in Program: Lending	Sector	Neither
Argentina	x	xSM[1/]				x	x	
Bolivia	x	x				x		
Brazil	x			x	x	x		
Colombia		xSM				x	x	
Costa Rica		x	x			x		
Ecuador	x	SM				x	x	
El Salvador			x			x		
Guatemala	x	x				x		
Guyana			x			x		
Haiti		x				x		
Honduras						x[2/]		
Jamaica		x				x		
Nicaragua								x
Panama	x		x		x	x		
Paraguay								x
Peru		x	x	x		x		
Surinam								x
Trinidad & Tobago								x
Uruguay								x
Venezuela			SM				x	
Unallocated Sector Missions	-	-	-	1	1			

1/ SM denotes sector mission planned

2/ Some time in FY74-78

December 1973

Summary and Conclusions

Two general observations of the data appropriately summarize the results of the questionnaire:

1) The responses to the questionnaire were "A" satisfactory in 39% of the cases, "B" fair in 31%, and "C" unsatisfactory in 30%. (Table 2)

2) For the Region, there are 5 countries where the overall state of knowledge can be rated as being "A" satisfactory, 13 countries as being "B" fair, and 2 countries as being "C" unsatisfactory.

The conclusion that I come to is that for the LAC power sector, the present state of knowledge is fairly good, and that if a program such as the one I propose in Table 2 (or a more diverse regional program) is followed, the state of knowledge in five years will be excellent, both in terms of quantity and quality.

ANNEX I

Questions		Argentina	Bolivia	Brazil	Colombia	Costa Rica	Ecuador	El Salvador	Guatemala	Guyana	Haiti	Honduras	Jamaica	Nicaragua	Panama	Paraguay	Peru	Surinam	Trinidad & Tobago	Uruguay	Venezuela
Technical																					
1. Types of power plants and capacities	(3.1)	A	A	A	C	A	B	A	A	A	C	A	A	A	A	C	A	A	A	A	B
2. Geographic distribution of plants	(3.2)	B	A	A	A	C	A	A	B	A	C	A	B	A	A	C	A	A	A	A	A
3. Generation, consumption and losses	(3.4)	B	A	B	A	A	B	A	B	B	C	B	B	A	A	C	A	B	A	A	B
4. Design criteria for power systems	(2.6)	B	B	A	A	B	B	A	B	B	C	B	B	A	A	C	B	C	A	A	B
5. Installed capacity of self producers	(3.7)	C	A	B	-	-	B	A	C	A	C	C	B	C	B	C	B	A	C	C	C
Finance																					
1. Priorities and magnitudes of power sector investment	(2.3)	C	B	C	A	-	A	B	C	A	C	A	B	A	A	C	A	C	B	C	B
2. Tariffs	(5.1)	C	B	A	B	C	B	A	C	B	C	A	B	B	B	C	A	C	B	B	B
3. Costs of production of electrical energy	(3.3)	C	A	B	A	A	A	A	C	B	C	B	B	A	A	C	C	B	C	B	B
4. Trends in capital investment	(3.8)	C	A	B	B	A	A	B	B	A	C	B	B	A	A	C	A	B	B	B	A
5. Investment program	(2.4)	C	A	C	A	B	A	A	B	B	C	B	B	A	A	C	A	C	A	C	C
6. Asset valuation	(5.2)	B	A	A	B	B	B	A	B	A	C	A	A	B	A	C	A	C	A	C	B
Legal/Institutional																					
1. Characteristics of producing companies	(3.6)	B	B	A	B	B	A	A	A	B	C	B	A	A	A	C	A	A	A	A	B
2. Government policies on power development	(1.1)	B	A	A	B	B	A	A	B	A	C	A	B	A	A	C	A	C	A	A	A
3. Decision making + implementation	(1.2)	B	A	A	B	C	A	A	C	A	C	A	A	A	A	C	A	C	A	A	A
4. Management and staff	(6.1)	B	A	A	B	B	B	A	B	B	C	A	A	A	A	C	B	C	A	A	B
5. Government policy toward village electrification	(4.1)	C	A	B	B	A	A	B	C	B	C	B	B	A	A	C	B	C	B	C	B
6. Details of pooled operation	(1.3)	C	B	A	-	C	-	A	C	A	C	A	A	A	A	C	A	A	A	A	A
Socio-Economic																					
1. Benefits of village electrification	(4.3)	C	C	C	B	C	C	C	C	C	C	C	C	A	C	C	C	C	C	C	C
2. Number and % of rural households with electricity	(4.2)	C	B	C	B	B	C	C	C	C	C	B	C	A	B	C	C	C	C	C	C
3. Access to service	(2.2)	B	B	C	C	B	B	C	B	C	C	B	B	C	A	C	A	B	C	C	C
4. Relationship between electric consumption and economic activity	(2.5)	C	B	B	A	B	C	B	B	C	C	C	A	B	A	C	A	A	C	C	C
5. Production and consumption patterns	(3.5)	A	A	A	C	A	B	A	B	C	C	B	B	C	A	C	A	A	A	B	C
6. Future development	(7.1)	B	B	B	A	B	A	A	B	B	C	B	B	B	A	C	A	B	B	C	B
7. Per capita consumption: growth trends	(2.1)	B	A	A	B	A	B	A	B	B	C	A	A	B	A	C	A	A	A	A	B

December 1973

Ranking	Question		Score (3 pt. scale)
1.	3.1	Types of power plants and capacities	2.6
2.	3.2	Geographic distribution of plants	2.5
3.	1.1	Government policy governing aspects of power development	2.5
4.	2.1	Per capita consumption: growth trend	2.5
5.	3.6	Characteristics of producing companies	2.5
6.	1.2	Means by which decisions pertinent to the power sector are implemented	2.4
7.	1.3	Details of pooled operations	2.4
8.	3.4	Generation, consumptions and losses	2.3
9.	6.1	Management and staff	2.3
10.	5.2	Asset valuation	2.3
11.	3.8	Trends in capital investment	2.3
12.	2.6	Design criteria for power systems	2.2
13.	3.5	Production and consumption patterns	2.2
14.	7.1	Future development	2.1
15.	2.4	Investment program	2.1
16.	3.3	Costs of production of electrical energy	2.1
17.	4.1	Government policy regarding village electrification	2.0
18.	2.3	Priorities and magnitudes of investments in the power sector	2.0
19.	5.1	Tariffs	1.9
20.	2.5	Relationship between electricity consumption and economic activity	1.8
21.	2.2	Access to service	1.6
22.	3.7	Installed capacity of self-producers	1.6
23.	4.2	Number and percent of rural households receiving electricity	1.4
24.	4.3	Benefits of village electrification	1.2

December 1973

Country	Composite	Technical	Finance	Legal/Inst.	Sócio/Econ.
Argentina	B	B	C	B	B
Bolivia	A	A	A	A	B
Brazil	B	A	B	A	B
Colombia	B	B	B	B	B
Costa Rica	B	B	B	B	B
Ecuador	B	B	A	A	B
El Salvador	A	A	A	A	B
Guatemala	B	B	B	B	B
Guyana	B	A	B	B	C
Haiti	C	C	C	C	C
Honduras	B	B	A	A	B
Jamaica	B	B	B	A	B
Nicaragua	A	A	A	A	B
Panama	A	A	A	A	A
Paraguay	C	C	C	C	C
Peru	A	A	A	A	B
Surinam	B	B	C	C	B
Trinidad	B	A	B	A	B
Uruguay	B	A	C	A	C
Venezuela	B	B	B	B	C

	As	Bs	Cs	As	Bs	Cs	As	Bs	Cs	As	Bs	Cs	As	Bs	Cs
	5	13	2	9	9	2	7	8	5	11	6	3	1	14	5
%	(25)	(65)	(10)	(45)	(45)	(10)	(35)	(40)	(25)	(55)	(30)	(15)	(5)	(70)	(25)

December 1973

PROJECT FOLDER

NORTHEAST Project

INTERNATIONAL DEVELOPMENT ASSOCIATION | INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT | INTERNATIONAL FINANCE CORPORATION

OFFICE MEMORANDUM

TO: Mr. C. R. Dickenson, Division Chief, LCPPT DATE: December 4, 1974

FROM: Renato Salazar, Engineer, LCPPT

SUBJECT: BRAZIL - South and Southeast Region Power Development Plan
Northeast Power Distribution Project - Preparation Mission
Back-to-Office Report

South and Southeast Region Power Development Plan

1. On November 8 I met in Rio Dr. Leo Penna, Head of the "Diretoria de Planejamento" of ELETROBRAS and Messrs. Amaranti, Assistant Director; Erber, Head of the Department of Market Studies; Ciarlini, Head of the Department of Energy Studies; and Franco, Head of the Department of Transmission Systems, to discuss the status of the power development plans for the South and Southeast regions as required under Section 3.03 (b) of the Guarantee Agreement of Loan 923-BR (Itumbiara Project) and for which the Bank has recently accepted the postponement of its submission from November 1, 1974 to January 31, 1975.

2. The updating and extension to 1990 of the market study of both regions is expected to be completed at the end of this year. Preliminary conclusions indicate that higher loads are expected than those shown under the current market study prepared in 1969 (and updated in 1972). In spite of an expected lower growth of the gross national product than assumed under the current market study, substitution of oil energy by electric power may produce a net increase on power load growth. At present some self-suppliers and industries using fuel oil for heating purposes (ceramic and similar industries) are requesting electric power from the utilities in view of fuel oil price increases. Substitution of LP gas by electric power for domestic cooking is expected to come about more slowly, since it would require rewiring of houses. Although there is no official indication that the government supports the above-mentioned substitutions, the predominantly hydro (and hydro-nuclear in the future) power generating system of the South and Southeast Regions seems to justify such a policy, as Brazil is a heavy importer of petroleum products.

3. On the power supply side, there are two elements of uncertainty: the date of commissioning of Itaipu (now expected in 1983) and the date of commissioning of the second nuclear unit (1200 MVA) at Angra.

4. The expected higher demand growth between now and 1983 and the above-mentioned uncertainties in commissioning new generating units, has led to the proposal to anticipate the construction of two major projects in the Southern Region: Foz Areia and Salto Santiago hydroelectric projects and the possibility of anticipating the construction of two hydroelectric developments up-stream of Itaipu on the Parana river, on the theory that this would reduce the risk of a major power shortage before 1983. The temporary power transfer from the South to the Southeast Region may create problems of overinvestment in the transmission system which are now under careful investigation.

5. The above-mentioned situation has required further studies by ELETROBRAS that will not permit completion of its power development plans until the end of January of next year.

Northeast Power Distribution Project

6. As previously arranged, a meeting was held in Salvador on November 11 with Messrs. Wilson Rocha, President of COELBA; Nicomedus Lopes Pereira, President of CELPE; Josemar Leao Oliveira, President of COELCE; Julius Wilberg from ELETROBRAS and K. Kikuchi and myself from the Bank.

7. Mr. Kikuchi explained that this project is a part of the Bank's interest in improving the living standards of the Northeast Region of Brazil and that this project, involving only the three largest state power distribution companies of the Region, would be an important first step, if further projects of this nature involving other state power distribution companies could be developed.

8. The main aspects to be covered by the program in which the Bank is interested were discussed. The areas for which the Bank assistance was originally considered (described in letter to ELETROBRAS of October 18, 1974) were:

(a) expansion and rehabilitation of the existing distribution networks in major cities;

(b) expansion of the existing mid-tension distribution system within the main cities to support the low-tension expansion;

(c) extension of the mid-tension system to integrate towns and villages around the major cities and improving the low-tension network of these towns and extensions to provide service to new areas;

(d) financing of household connections, including interior wiring of prospective low income consumers.

9. The first three areas, which we will call Part A, form part of the normal expansion and improvement of the distribution program of the companies and at the meeting it was suggested that it could cover expansion requirements for 2 to 2-1/2 years of demand growth.

10. The last area, which we will call Part B, does not constitute an expansion of the companies' distribution system as it covers installations to be owned by the consumers; the companies, with the Bank's assistance, will lend the necessary funds for its construction.

11. The interest of the Bank on Part B was emphasized and we explained that one of the purposes of extending assistance for Part A was to provide resources so that the utilities could undertake the connection of low income consumers.

12. The companies' representatives expressed their appreciation for the fact that the Bank was conscious of the financial burden involved in the extension of power distribution to low income areas and that the proposed system would make such a program viable.

13. In order to present this project in a more concrete form, the following points were suggested to the companies as working assumptions:

(i) The Bank would consider financing the purchase of equipment and material procured under the Bank's Guidelines for both Part A and Part B, for a maximum amount of US$40 million corresponding to an expansion program of a total cost that should be at least of US$100 million (40 percent of the total cost).

(ii) The Bank would consider financing 100 percent of the equipment and material involved in Part B and the proportion of the cost of equipment and material for Part A needed to arrive at an overall participation of 40 percent.

(iii) The companies would finance the difference between the total cost of connection and interior wiring and the materials for this purpose. The consumers would pay the companies, without interest, the total cost of connection and interior wiring in monthly installments added to the energy bill as indicated in 15 C. and D. To offset the effect of inflation, the loan to the consumers could be expressed in equivalent value of kWh at time of installation.

(iv) The Bank will prepare a questionnaire that would permit an evaluation of the cost of the program under a uniform basis for each company and in order to determine the total amount of the possible loan and the part to be assigned to each of the companies (if cost of Part B appears too small in proportion to the total, the amount of the loan would be reduced).

14. From November 11 through November 19, I visited the distribution systems of Salvador, Recife and Fortaleza, and also visited the region around Caruaru, about 150 km inland from Recife.

15. The visit to the above-mentioned cities and discussions with the engineers in charge of power distribution of the three companies permitted me to arrive at the following tentative conclusions:

A. The number of households not connected to the system is small in the cities of Salvador and Recife and a large proportion of them are squatter families living in shacks (alogados). The city authorities are contemplating their evacuation to relocate them in new areas where the main urbanization infrastructure will be provided. Some of the families are too poor to pay even the minimum energy bill.

B. The program should consider at this stage, potential consumers that at least can pay the minimum consumption bill (30 kWh/month, which amounts to around 11 Cr = US$1.5) plus service of a loan to finance the connection and the internal wiring. It is expected that most of the potential consumers eligible under this criterion are located in cities and villages of the interior of the 3 states involved.

C. It is recommended not to extend for more than 30 months the repayment period of the loan for connection and internal wiring. 1/ Based on the present estimate cost of connection and minimum interior wiring (3 lamps with 3 switches and 1 outlet) of the three companies, the potential consumer would have to pay a monthly amount similar to what they would pay as minimum consumption (11 Cr = US$1.5).

D. In the case of COELCE, a monthly installment to repay the loan of the same order of the minimum consumption seems too high and the company is willing to find some ways of reducing the cost of connection and interior wiring (to two light centers) or absorbing part of the cost of connection.

E. The power distribution companies of the Northeast have initiated a program for standardization of designs and equipment for power distribution. The proposed Bank project would encourage such a program and the three companies involved are willing to centralize procurement of some items already in process of standardization.

16. Based on the above, it is proposed to send to each of the three companies involved a letter that summarizes the findings of the mission and a questionnaire which would update some of the information previously received by the Bank and put such information on a uniform basis. A draft of letter to the companies and questionnaire is attached.

17. ELETROBRAS has indicated that they are willing to be the borrowers and to onlend the funds to the state power distribution companies; however, they are unwilling to assume responsibility for financing cost overruns on the projects. It will therefore be necessary to discuss the guarantee arrangements with the Government. An alternative to the above is to lend directly to each of the three state distribution companies.

18. After receiving the response to our questionnaire, a more precise proposal of the Bank's participation should be presented to the companies. At this stage, I believe that it would be necessary to investigate the financial situation of the companies and financial repercussions of the proposed project requiring the participation of a financial analyst in the mission.

1/ A larger period would be undesirable because of the high mobility of potential consumers.

Loan 1008-BR - Effects of Sobradinho Reservoir

19. During my stay in Rio I met Mr. Guzmao, Planning Director and Mr. Monteiro of CHESF and gave them a draft of the Reporting Requirements for the resettlement operation of Sobradinho reservoir and for the Middle Sao Francisco (which was attached to my memo of September 12, 1974). Mr. Kikuchi reviewed with Mr. Guzmao the status of the preparation of the reports that CHESF should present to the Bank in accordance with Sections 3.06 and 3.08 of the Loan Agreement and the resettlement operation in general, an account of which is given in his memo to files dated December 5.

Attachments

RESalazar:bgw

cc: Messrs. Geli, LCPDR
Wiese, LC2DR
Skillings, LC2DA
Kikuchi, LC2DA
Wessels, LCPPT
Mena, LCPPT
Linder, LCPPT
Acevedo, LCPPT
van der Tak (3) VPSVP
Finne, VPSVP
Rovani (3) PBP
Bowron, P&B
Helne (CTR)
Cancio (LEGAL)
Ms. Steiner
LAC Files
Project Folder
Black Books

QUESTIONNAIRE

Part A:

1. Estimated investment cost in low-tension distribution system to serve load increases of years 1976-77 for material 1/ and other costs, at prices of December 1974, and number of new connections.

2. Same as (1) for 13.8 kV system including kVA capacity of the 13.8 kV/low-tension transformers and km of 13.8 kV lines.

3. Same as (1) for 69 kV system including kVA capacity of 69/13.8 kV transformers and km of 69 kV lines.

4. Same as (1) but for rehabilitation of the existing system.

Part B:

5. Estimated number of potential consumers living in areas served by the company that are not connected to the power distribution system because they cannot afford the cost of connection.

6. (a) Estimated number of potential consumers involved in (5) that can pay a monthly consumption of 30 kWh plus an equal amount to serve a monthly installment to cover the cost of connections and interior wiring as indicated in (7) and (8).

   (b) Should it be possible to charge less than the equivalent of 900 kWh per connection, the estimated number of potential consumers described in (5) that would be able to pay such lower charge for connection and interior wiring in 30 months or less.

7. Estimated average cost of a minimum capacity single-phase connection between the nearest low-tension pole and distribution panel, excluding meter, separated into material, labor and other expenses including supervision. 2/

8. Estimated average cost of a minimum household wiring installation separated into material, labor and other expenses including supervision. 2/ For purpose of comparison such installation would consist of:

   40 mts (2 by 20) of insulated wire
   1 outlet
   3 switches

9. Estimated investment cost of distribution system required to serve potential consumers described in (6) for 13.2 kV and low-tension facilities, separated into material and other costs. 2/

1/ Excluding concrete poles, which should be included in "other costs."
2/ Materials to be purchased by the company and labor supplied by contractors under company's supervision.

DRAFT
RESalazar/bgw
December 4, 1974

President
COELBA
CELPE
COELCE

RE: Power Distribution Project for the Northeast

Dear Mr. :

We wish to thank (COELBA - CELPE - COELCE) for the courtesies extended to Messrs. R. Salazar (and K. Kikuchi) during their recent preappraisal mission for a possible power distribution project for the Northeast.

Based on the discussions with your representatives, we wish to summarize our views on a possible Bank assistance in your company's power distribution expansion projects.

The Bank would consider financing up to 40 percent of the total cost of your power distribution expansion program, comprising works needed to cover the load requirements of 1976 and 1977 (which we will call Part A); and the cost of the connections and household interior wiring of potential low income residential consumers (which we call Part B).

If a loan were approved the Bank's funds would be available to finance purchase of material and equipment exclusively following the Bank's Procurement Guidelines, a copy of which we are pleased to attach. The Bank would finance a portion of the cost of the material and equipment of Part A and 100 percent of the cost of material and equipment related to Part B.

Your company would finance the balance between the total cost of the project and the portion that the Bank might finance as explained above. As discussed with you, in the case of Part B, the consumers would pay back to your company the cost of connection and interior wiring

without interest in up to 30 monthly installments which would be added to the energy bill. Such installments can be expressed in terms of equivalent value of a monthly uniform number of kWh.

In order to quantify the financial requirements and further consider the Bank's possible participation in your expansion program covering Parts A and B, we are attaching a questionnaire in order that you can update the information previously sent to the Bank and supply information on a uniform basis for each of the three state distributing companies that the Bank is contemplating to assist through the first Northeast power distribution project (COELBA - CELPE and COELCE).

You will see that for determining the number of potential residential consumers, for which the company will finance connections and internal wiring, we would like to receive the information corresponding to two criteria as explained in point 6. The final decision on this respect could be taken after analyzing your response.

The Bank and ELETROBRAS will explore further the question of who would be the borrower or borrowers for any proposed Bank loans and would inform you accordingly.

In order that we may further consider this matter, we would appreciate receiving a response to the attached questionnaire and your comments on the above-mentioned proposals.

Sincerely yours,

R. F. Skillings

Attachment